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RESIDENT ATTITUDES TOWARD
COMMUNITY DEVELOPMENT ALTERNATIVES

by

Chih-Yao Chang

A dissertation submitted in partial fulfillment
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

in

Sociology

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2010

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ABSTRACT

Resident Attitudes toward Community Development Alternatives

by

Chih-Yao Chang, Doctor of Philosophy

Utah State University, 2010

Major Professor: Dr. John C. Allen
Department: Sociology

Utilizing survey data collected in four communities in the State of Utah, this study examined the extent to which rural resident perceptions and attitudes toward local community circumstances influence their own expectations and attitudes subjectively toward future community development alternatives. Understanding perceptions of community and community development, as well as the patterns of localized community development, is crucial and needs to consider residents' opinions and attitudes toward unique rural economic, environmental, and social conditions in order to help preserve the unique characteristics of the way of life while continuing economic improvement and social betterment in rural areas.

Three conceptual frameworks of development (economic, environmental, and social) are applied in this study to explore the relationship between local residents' general attitudes toward the current conditions in their community and their attitudes toward development alternatives. I examine how these three development frameworks guide rural scholars to understand whether the pattern of community development is

consistent across the region or localized from community to community. Four different types of rural communities were selected in a Utah-wide community survey in the summer of 2008. These communities are facing four different change patterns: an increasing senior community, an energy-development community, a recreational community, and a constant community that has remained stable over the last five decades. Each type of community has its unique economy, lifestyle, culture, and environment, in which local residents have developed a way of life in response to these changes in social and economic structures.

Research findings indicate that the local residents' self-perceptions of community economic situation are not significant indicators to support the arguments of the economic development framework. However, indexes of environmental and social development frameworks are found to have strong associations with locals' environmental and social development alternatives. Also, different types of rural community show different demands for community development strategies, implying that a single development framework would not be sufficient to explain the complex of local residents' perceptions and attitudes toward community development unless the researchers integrate other perspectives into the model.

ACKNOWLEDGMENTS

The acknowledgements are composed of two languages, English and Taiwanese. The Taiwanese version is especially for my home country friends and family who may or may not read English. 這篇謝誌同時也要寫給我台灣的家人及朋友. 我想要讓他們知道在我求學的過程中, 他們對我的情感支持上扮演著舉足輕重的角色.

The completion of this dissertation is dedicated to the many people who continually supported and helped me.

I would like to acknowledge my major professor, Dr. John C. Allen, for his infinite support and continued enthusiasm. John and I have been working together since 2006. In that afternoon we first met, he and I talked about our common research topics delightedly, and he was willing to be my dissertation chair without hesitating for even 1/10ⁿ seconds when I asked him. After that day, he has been funding me as his research assistant, and encouraging me to think research questions creatively and publish our research findings actively. He also continually encouraged me and kept an optimistic attitude toward the difficulties and challenges facing me, such as course work, comprehensive exams, proposal defense, dissertation defense, and future job career. Undoubtedly, I could not have completed the doctoral program without his guidance and assistance. Recently, he has been named the Dean of the College of Humanities and Social Sciences at USU. Congratulations! I am confident of his being in this position as successfully as he has been in research and teaching.

I would also like to express my deepest appreciation to all my other committee members. Dr. Michael B. Toney had been supportive whenever I stopped by his office

and asked for his help. His insightful viewpoints lighted me on the right track. Dr. Richard S. Krannich provided lots of useful opinions and ideas to me when I wrote my dissertation, and he also kept pushing me to finish it whenever we met on the hallway (sometimes I picked up an alternative route and spent longer time in my office because of this). Thank you, Rick. You are one of my respectful scholars. Dr. Paul M. Jakus is a very knowledgeable scholar who enlightened me on advanced statistics. He also readily accepted my invitation to being my committee member before he really knew who I was. I tried to convince him that he made a right decision. Hopefully, I did it. Dr. Steven E. Daniels helped me develop critical thinking to research questions. His comments were always useful to make my research better and better.

In addition, my sincere gratitude obviously must go to Drs. Susan E. Dawson and Gary E. Madsen. Susan, Gary, John, and I had organized a research team focusing on community study for years before their retirement. However, they are not just my colleagues and advisors, but also close friends continually supporting and encouraging me. They always left sweet cards and candies on my desk whenever I was frustrated from discomfiture. They made me to believe I can always count them on. I was so lucky to have such great team members to work with.

Also, I would like to thank friends and fellow graduate students in the Sociology Department. Dr. Lisa M. Ralph was one of my best friends. She and I had gone through too many challenges together. The comprehensive exams and dissertation thing drove us crazy always. She and I had too many good and bad common memories in the office. One of them worthwhile to be mentioned here is that one day we sang and danced “we are superman/superwoman” in her office at 1 a.m. when writing our dissertations. It had been

recorded and uploaded to *youtube* so that we can always watch this video to encourage ourselves when facing difficulties, especially after her leaving. Fellow doctoral students Anita, Becca, Brian, Carla, Eduardo, Ellen, Ernesto, Greg, Hyojun, Joyce, Lim, Lori, Miranda, Nao, Stephanie, Ting, and Yan gave me enormous support and endless encouragement. They also brought me joy, creating some of my fondest memories of my times here. Also, our beautiful staff G, Dori and Ann, are those I would like to thank specifically.

I am thankful to my badminton buddies: Ameya, Connor, John, Sanyogita, Swadesh, Tusa, Yot, and all others. Thanks for giving good times to me in HPER every Friday night.

隻身來到美國求學, 沒有朋友的幫助與支持, 我想我也沒辦法順利地拿到學位. 首先我要感謝的是洪氏企業兩位公子的鼎力協助, Alvin and Tom. Alvin 對我的意義在於他開啓了我的眼界, 體驗到原來我生活的世界與外面有多大的不同. 來到美國的初期, 我被囚禁在冰冷的書海底層, 每天錙銖必較地計算時間花費在唸書, 吃飯, 和睡覺的分配上. 很容易就與世隔絕, 更別提放慢腳步去欣賞這邊的風景. 但 Alvin 他卻經常硬拉著我搭上他的 BMW M3 出去吃飯與閒晃, 體驗有錢人在美國的生活. 一時間, 我暈眩於這樣簡單輕鬆的生存方式而忘記自己來到美國的最初堅持與想像. 甚至打算就轉換跑道, 跟著他一起做生意. 雖然最後這條路對我而言並不適合, 但也是因為這樣的轉折, 讓我能在之後的求學路上更加努力與堅持. 謝謝你, Alvin.

Tom 與他的一家人則是讓我有個溫暖的依靠. 借宿在他家的兩年間, 他們點燃了一盞燈, 讓我在深夜從研究室回家後, 能有家的感覺. 雖然我沒辦法有時間跟他

們多互動,但生活在同一個屋簷下,他們的存在讓我不再感覺到孤單與無助.經常,一個人在這邊,可以整天不開口,就專心在工作上.但這不是自願性的結果,而是結構性使然.所幸,每次我回到家, Tom 總還清醒著,我們可以隨性地聊著天,讓我舒緩從緊張的課業中累積的疲憊與寂寥.這些社會性支持的重要性並不會亞於在學術上教授們所能提供的協助,兩者都是我要完成學業所不可或缺的因素.

另外,一些我在這邊所遇到的朋友們,也給於我很大的輕鬆與歡樂記憶.一起滑雪,一起出遊,一起吃飯聊天.這些日常生活的點滴也讓我在繁忙學業中釋放些許壓力.謝謝你們: Emily, Ivy, 淑敏, Jay, I-Fan, Thomas, Cici, Irene, Wei, Rachel, Maggie, Tommy, Lulu, Rainbow, Xinxin, Qian, Yu-tein, Tab, Jessica, Buk, and Ada.

另外,由於網路發展的迅速,台灣朋友可以不停地送碳到猶他,作為我堅強的後盾.明祥,是唯一一個男生我每天跟他 msn.就像之前那位金鐘獎影帝在得獎霎那,左手頓胸,右手指著台下的友人說,“我們是一輩子的兄弟”一般,他是我在這邊唸書期間一個很重要的支持.老大,謝謝你.秋樵,一個可愛的小老弟,也是經常在網路上陪伴著我.我們一起聊天,一起幹譙學長,這都是很有效的壓力抒發.他們兩個是從大學時代就在一起打球的好友.沒有他們,我的生活會很寂寞.謝謝你們.

接下來感謝的就是我的家人.他們雖然都不知道我在幹麼,卻仍全力支持我在這邊的工作.每次與他們通電話或者視訊,這邊生活的痛苦就會得到舒緩,雖然思鄉的情緒也悄悄上了心頭.阿公,阿嬤,媽,雯琪,三八婷,還有我那兩個可愛的小姪女,怡潔與怡慧,我要告訴你們,我畢業啦!

最後,給我最愛的小玉,雖然我們分隔兩地,加上時差長達 14 或 15 個小時,卻仍每天通電話,訴說著彼此心情與日常生活瑣事. 你的默默支持給於了我最大的動力與韌性在這邊求生存. 你對我的好,我一直深深,深深地珍惜著.

A handwritten signature in black ink, appearing to read 'Chih-Yao Chang' in a cursive, flowing script.

Chih-Yao Chang

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CHAPTER I

INTRODUCTION

Traditionally, rural areas have had their own social, economic, and cultural circumstances distinct from those of their urban counterparts. Certain patterns of economic activity and low population density characterize rural regions, including agricultural communities, fishing communities and logging communities, for example. These unique ways of life in rural areas, tied closely with the natural environment, have fostered close social relationships and attachments to place among local residents (Goudy 1990). In past decades economic activity in rural areas has suffered from cycles of severe recession and stagnation and the lack of economic opportunities and social services has caused migration away from rural communities (Varady 1983). In order to continue economic improvements and social betterment in rural areas, while preserving the unique characteristics of the way of life, including efforts to promote localized community development, it is necessary to consider residents' opinions and attitudes toward unique rural economic, environmental, and social conditions. Hence, by adopting economic, environmental and social development frameworks in community development studies, this dissertation will analyze what residents consider to be the most important development issues affecting their quality of life.

By applying three conceptual frameworks of development (economic, environmental, and social), I explore the relationship between local residents' general attitudes toward the current conditions in their community and their attitudes toward development alternatives. I examine how these three development frameworks guide

rural scholars to understand whether the patterns of community development are consistent across the region, or whether they are localized from community to community. I argue that scholars should consider the uniqueness of each rural community and see how such uniqueness is embedded in rural residents' value systems in terms of future development paths, beyond the general arguments of development frameworks.

In terms of method in rural development studies, there are many ways of viewing community development. One of the community development foci is economic prosperity. This common concept of economically-oriented development has been the norm across early community studies. Economic development discussions mainly focus on social-economic betterment and quality of life in rural communities. This betterment is highly emphasized in public policy-making processes. For example, the United States government launched a series of programs in the name of "rural renaissance" to build "a healthy, safe, and prosperous place in which to live and work" in order to solve economic problems in rural areas (United States Department of Agriculture 2008:2). The development projects in these cases, such as rural-based businesses, renewable energy, natural resource extraction, job availability, or upgrading modern infrastructure and services typically reflect the dominance of economic ideologies.

With the dominance of economic considerations in industrialized societies traditional community development is based upon rational thinking, aimed at achieving the goal of economic revitalization in rural areas. Such a rationalization process, following a Weberian argument, is equivalent to the process of modernization and is gradually developed into a technical exercise in a value-free context. Habermas (1975) called it "instrumental rationality" and argued that technocratic consciousness dominates

societies on the basis of efficiency and productivity, which become the core values of mainstream community development.

In contrast, environmental concern has also been promoted in the process of making development plans. Since the 1970s a rising environmental focus on natural amenities linked with the concept of sustainable development in rural areas has emerged. The traditional view of neo-liberal economics applied to rural community development projects has mainly been criticized by those with environmental concerns, who argue that human beings are by nature merely one of the species on the earth and that community issues are not solely related to social and economic situations, but also to the natural phenomena surrounding them. Instead of the traditional economic and physical infrastructure orientation of community development, environmentalists emphasize the balance between human needs and natural/environmental sustainability when facing rural community development issues.

This second framework adopted for community development specifically emphasizes the harmonious balance between the environment and local society. By considering societal reliance on the natural environment, an environmental orientation has been adopted to understand the relationship between social facts and the natural environment. Environmentalism contends that society would collapse if it experienced the process of development without weighing the importance of environmental influence.

In addition, some scholars believe that the economically-dominated model of community development should, instead, emphasize development in a community when working on various social and economic projects and should view the community as a whole in order to encourage communication and cooperation between individuals and

groups as a more fundamental community development model. Traditionally rural communities have been viewed as social entities in which social relationships and close ties with family, neighbors, relatives, and friends are emphasized. People in rural communities have a stronger sense of place attachment than their urban counterparts do. Because of such unique characteristics of social relations within rural communities, the theme of community development should surround the social configuration and its dynamics. Kaufman (1959) argued that the center of community development is to preserve interpersonal relationships in a traditional sense of community, dependent upon the community collective action emerging to cope with internal and external changes and the social and economic programs designed to respond to these changes.

The foci of rural community development can be roughly categorized into at least three general frameworks I have described: economic emphasis, environmental concern, and social relationship orientation. Each of these approaches to conceptualizing development has been adopted by scholars and community practitioners when discussing community development issues. This dissertation attempts to explore the extent to which these approaches are embedded in the belief systems of local residents, in an attempt to assist the community in creating localized development plans in response to their needs. To achieve this goal I begin by reviewing the macro social and economic changes that rural communities have experienced. Next, I summarize the extent of the meso level of similarities and differences in social, economic, and cultural contexts in the four study communities and how residents' attitudes toward these external circumstances influence their attitudes toward development in their community. Finally, I examine the predictor

variables derived from the three community development frameworks by using a logistical regression modeling method.

STATEMENT OF RESEARCH QUESTIONS

Many of the programs of rural revitalization have focused on physical construction and infrastructural improvement to develop local economies and promote social betterment by adopting traditional concepts of the economic superiority of industrial societies. This linear thinking has been criticized by the theorists of the other two development models (those with environmental and social foci). They argue that rural communities cannot always be viewed as a homogeneous social entity and that community problems are not necessarily solved only through economic means because each rural community has its own unique social, historical, and cultural context. As a result, different development frameworks have been manipulated for rural development by drawing on the advantages of social infrastructure and the natural environment. In the process of community development, theoretical approaches guide the direction of a rural area's future, while local residents determine the success of development project through their attitudes.

By using data from four rural Utah communities surveys, this dissertation focuses on the goal of understanding associations between residents' general attitudes and opinions on local community circumstances and their attitudes toward development alternatives. I specifically focus on local residents' attitudes, opinions, and behaviors toward community and the development of communities with different socioeconomic conditions under the theoretical frameworks of the three major development approaches.

Four different types of rural communities were selected in a Utah-wide community survey in the summer of 2008. These communities are facing different changing social patterns and include an increasing senior community, a community centered in energy-development, and a recreational community as well as a reference community that has remain stable over the last five decades. Each community type hosts a unique economy, lifestyle, culture, and environment in which local residents have developed a way of life in response to these changes in social and economic structures. It is important to understand the ways local residents view their community and the extent to which their interactions and involvement in community issues are influenced by different economic structure changes.

The main purpose of this dissertation is to answer the overall research question:

To what extent, and in what manner, do the attitudes of residents toward economic, environmental, and social issues affect their attitudes toward community development alternatives?

In order to depict a useful framework of rural community development, it is crucial to understand not only the external impact of social and economic change, but also the influence of individual community circumstances on rural communities where local residents' attitudes are formed and turned into action for their community betterment.

CONTRIBUTION OF THIS DISSERTATION

Resident attitudes toward community development alternatives form the core theme in this dissertation; to examine the mechanism for community change by exploring associations between the general attitudes of residents toward community circumstances

and their attitudes toward community development alternatives. Therefore, the significance of conducting this research is to examine observable social and economic changes that form individual attitudes and opinions about local community circumstances in response to how they develop their own expectations and attitudes subjectively toward future community development alternatives.

Exploring the general attitudes of residents toward local economic, environmental, and social circumstances and toward future community development further complicates the study of rural communities. First, this dissertation discusses the emergence of three main development models in rural community studies by analyzing social and economic changes. I present the foundation of these development frameworks by tracing back the legacy of classical social theories and describing how these contemporary development perspectives are shaped by or depart from classical theories.

Second, the similarities and differences among rural community contexts are examined in this study to clarify the various rural residents' development attitudes towards their community under the overall economic changes affecting rural areas. Here, I select four different types of rural communities to represent the general issues affecting rural areas: aging, energy extraction, recreation, and economic stagnation. I analyze how different community development frameworks are embedded into these rural areas to guide the direction of their future. By adding characteristics of rural communities into the model of community development, I am able to examine the effects of economic, environmental, and social attitudes of residents on their attitudes and behaviors towards localized development.

STRUCTURE OF THE DISSERTATION

In order to explore similarities and differences between rural communities as well as the development outlooks held by local residents, this dissertation's five chapters focus on the topics: (1) the historical background and theoretical discussion of three community development frameworks; (2) the structural factors and community context that contribute to the appropriateness of three community development frameworks in response to the development demands among rural residents; (3) application of logistic regression modeling to explore the structural determinants of individual development attitudes.

To be more specific, Chapter II reviews the three development approaches applied in rural community studies, namely, the economic development, environmental development, and social development frameworks. Each of these three development frameworks has a theoretical basis and is not necessarily suitable to solve all the problems in rural areas. However, by tracing them back to their intellectual foundations we are able to understand their theoretical underpinnings in order to help shape the vision of rural development for future scholars and community practitioners. The environmental model includes the concept of sustainable development so as to consider the balance between economic development and environmental protection. Social relation theory focuses on interpersonal ties and the relationships that facilitate collective action within a community in order to help cope with any internal and external social changes. These development frameworks guide community scholars to understand how residents view their local circumstances and their attitudes towards future local development.

Chapter III introduces the methodological approach of this research, including census data, research areas, definition and measurement of variables, and practical limits of the data. Since the overall resident attitudes towards social and economic changes are examined in the research model, the types of community, community context, and individual social/economic background are all considered to contribute to the explanations of how individual attitudes toward community development are formed.

Chapter IV presents my research findings through census data, survey data, and logistical regression models. I present the residents' opinions and attitudes toward community development by examining four rural communities in Utah and evaluating to what extent their personal opinions and attitudes reflect social and economic changes within the communities. This discussion provides the fundamental information about local residents' perspectives regarding future community development.

Next, in order to examine the research hypotheses in terms of the relationship between local residents' general attitudes toward current conditions and local community attitudes toward development alternatives, as well as individuals' socio-demographic characteristics, logistic regression modeling is applied. In the logistic regression model, individuals' major concerns with regards to community development issues are used as the dependent variable. Independent variables, such as the respondents' degree of satisfaction with local economic conditions, respondents' environmental attitudes and behaviors, affection for the local community, and social distance from neighbors, are used to examine the economic, environmental, and social development frameworks.

Finally, Chapter V focuses on the findings from the research models and discusses the results in the context of the original research objectives: to explore the

associations between the economic, environmental, and social attitudes of residents and their attitudes towards local community development alternatives. This chapter also links the relationships among the frameworks of community development, community context, and individual attitudes, in order to represent the diversity found across various community development contexts.

CHAPTER II

A REVIEW OF COMMUNITY DEVELOPMENT LITERATURE

This dissertation explores a sociological question that is crucial to understanding community changes and development: To what extent do one's attitudes toward community economic, environmental and social circumstances affect one's attitudes towards local community development alternatives? In this chapter, I evaluate three community development frameworks by reviewing their theoretical background. Several sections in this chapter respond to prior literature about community development studies. The first section describes general concepts of community and community development that were used to construct the background of this study. The following sections review three development frameworks and their theoretical orientations and how their ideas would be applied in the rural development agendas that are used to construct the conceptual orientations that guide analysis of my research question.

After reviewing three common development frameworks, economic, environmental and social relationships, I present conceptual frameworks of community development and develop a series of research hypotheses.

GENERAL CONCEPTS OF COMMUNITY AND COMMUNITY DEVELOPMENT

Generally rural studies focus on community development and are about a series of supportive processes designed for increased prosperity, advancement, social/economic capacity, and empowerment in a locality (see Cawley 1989; Jones and Silva 1991; Checkoway 1995). Community has been seen as the unit of action to play the lead in

rural development. In this context, the basic procedure of planning community development is to identify local needs, establish mutually agreeable goals and objectives, and implement plans by mobilizing accessible resources and community coalitions for community betterment. Accordingly, a variety of community planning strategies and actions have been created and actively implemented with the involvement of local residents.

This procedure is composed of several elements that determine the framework of community development and merit the development of a sub discipline to discuss their significance and characteristics. One element is the definition of “community.” The definition of “community” has been discussed in a variety of ways for decades. There is some consensus that the three general components of a community include, a shared territory, a local society, and a process of locality-oriented collective actions (Hillery 1955; Goode 1957; Long 1958; Kaufman 1959; Bell and Newby 1972; Wilkinson 1972).

A shared territory refers to a geographic location, such as a neighborhood, town, city, county, region, country, and so forth. A local society is an integrated union in which the daily activities of people and a complement of social structures embody all aspects of a common life. A process of locality-oriented collective actions can be understood as the local residents exerting effort collectively on behalf of their common interests. In this study, I specifically focus on the town/city community levels in rural areas to better understand whether this level of community forms a strong sense of belonging, thereby binding its residents together and joining their inner effort in response to external social and economic changes, as well as the demands of community development in general.

Community agency is the driving force for community development from inner demands and collective actions through the cooperation of all of those involved in local organizations (Laverack 2001; Sharp 2001; Green et al. 2002; Sharp, Flora, and Killacky 2003). Scholars who study community initiative emphasize local residents' self-motivation to establish their development agendas for the community (Fawcett et al. 1984; Summers 1986). The last element mentioned here is the opportunity of community members to participate in public discussion. It is important for community development to involve many individuals, segments, classes, and groups within the community, and that each member has an equal chance to speak up and take part in the public forum. In addition, democracy, rationality, and the orientation toward accomplishment of community development agendas in which local residents participate are key factors. Communication and power structure within the community are also important aspects. Following these essential elements of defining community, current research on community development's primary focus is on the social, political, and economic changes in a given territory (e.g., Hochachka 2005 and Reimer 2006).

Since a community is understood to be a living place manifesting the physical characteristics of a setting and a social and historical context, community development should be considered in terms of the meaning of locality through personal activities, experiences, shared values, and the common historical memory. As a result, the concepts of community and community development adopted in this study consist of a shared territory, a local society, and the process of community autonomy and empowerment for a general purpose of community betterment. The following sections will specifically focus on three community development perspectives and argue how these perspectives

respond to the requirements of rural community development and contribute to the direction of development in a given territory.

ECONOMIC FOCUS IN COMMUNITY: THE IDEOLOGY OF INSTRUMENTAL RATIONALITY

The economic focus of community development has been the mainstream concept of solving rural problems. In order to solve economic problems in these areas, the U.S. government launched a series of programs in the name of “rural renaissance” to build “a healthy, safe, and prosperous place in which to live and work” (USDA 2008:2). The goal of the renaissance program is to focus on the social-economic betterment and quality of life in rural communities. With economic considerations the dominant concern of modern societies, the way to improve rural life is straightforward and rational: identify problems and then solve them by enhancing community empowerment and advancement. This rationalization process, Weberian scholars argued, is the process of modernization along with technical expertise in a value-free context; neo-Marxist Habermas (1975) termed this process “instrumental rationality,” saying this technocratic consciousness dominates societies on the basis of effectiveness and efficiency.

This ideology of rationalization has been reflected in the early studies of community development. For example, Sanders (1958) theorized the nature of community development into four idea types: a process, a method, a program, and a social movement. Each of the four types suggests a particular way of viewing community development. Among them, community as a method means “process and objective” (or a means to an end), that is, a series of processes to carry out particular community goals. This method corresponds to the rationalization of the problem-solving model, namely, the

goal or objective of development has been identified first and then the methods or plans have been developed in response to it. He specified this concept as “a process is guided for a particular purpose, which may prove “harmful” or “helpful” to the local community, depending on the goal in view and the criteria of the one passing judgment” (Sanders 1958:5).

Community development identified by Sanders (1958) considers the importance of social organizations, which are in charge of certain missions within communities. Sanders identified the role of hierarchical structure in communities in terms of detecting problems, setting agendas, and implementing plans. This view of development emphasizes the sound social channels through which community programs can be carried out. The sound social channels refer to a well-developed organization with a clear division of labor, resource accessibility, and members sharing common values and pursuing the same objectives. Social organizations are the primary agents participating in community process and mobilizing resources to implement plans for their common goal. Therefore, according to Sanders, community development is equivalent to development of local organizations that effectively implement “subject-matter specialties such as health, welfare, agriculture, industry, recreation, etc” across all levels from groups and associations to communities and regions (Sanders 1958:5).

Obviously, community development as a method is used to develop a process to identify goals or objectives for the community, while community development as a program focuses on developing sound social organizations to implement projects and plans for a specific community goal or objective. These two concepts of community development are parallel concepts that were developed within different contexts of

sociological orientations, but which are still under the common umbrella of the instrumental rationality of modern societies, emphasizing effective and efficient utilitarianism.

Following the traditional ideology of rationality in community development studies, Rothman (1979) identified the social planning approach as one of the ways to understand community development. He argued that the social planning approach is a technical process with regard to a certain community problem and emphasized “rational, deliberately planned, and controlled change” within communities (Rothman 1979:27). This approach would expect experts to take the lead in planning programs to complete “a concrete task or the solution of delimited problems pertaining to the functioning of a community social system” (Rothman 1979:27). He suggested that the social planning approach presupposes that only in the largest bureaucratic organizations are expert planners equipped with the technical abilities to operate and implement programs in order to cope with complex social and economic change processes. The core theme of the social planning approach is to find effective and efficient ways for “establishing, arranging, and delivering goods and services to people who need them” (Rothman 1979:27).

The rationality approach in bureaucratic organizations is seen as an effective and efficient way to identify the issues of community development. The ultimate goal of this approach, according to these scholars, is to manipulate the process of community development into standard phases of identifying problems, mobilizing resources, and setting agendas to implement programs for the goal of social betterment. For example, Daley and Kettner (1986) saw development as episodes of purposeful change in which

the collaboration of participants, nested in multilevel bureaucratic organizations, is necessary to cope with deliberately identified problems. Additionally, Cawley (1989) developed a linear model to describe this process: awareness of process, identifying needs, setting goals, planning actions, taking action, and completion and consolidation. He argued that in each phase there exists a constant interaction between identifying a problem, making a decision, and taking action to share and express concerns or community problems. In short, this rationality approach has been adopted into an institutional agenda used to respond to objective and observable social facts.

Since economic dominance of modern societies has also been prevalent in rural community development, macro economic conditions in rural areas are seen as objective social facts that have been an important aspect of community studies. For example, by adopting the argument of globalization, rural economic restructuring focuses on how the structure and distribution of capital, infrastructure, labor, and transportation provide relative advantages and disadvantages to places within global or regional markets (Brabant and Gramling 1997; Bunker and Ciccantell 2005). Specifically, Bunker and Ciccantell (2005) argue that the existing theoretical formulations of globalization adopt a material and spatial perspective that determines the scale of world trade. To Bunker and Ciccantell, globalization is the process of increasing the connectivity and interdependence of the world's markets and businesses. This process has increased in speed dramatically as technological development facilitates international businesses. When looking at the capitalist world's internal dynamic of globalization, the focus is not on the suppression of classical relations of class, labor, and politics within a territorial base, but on a historically constant process of expansion that may be reaching its global

limits, either materially or ecologically (Bunker and Ciccantell 2005). Such a research approach provides a good illumination of rural restructuring when rural communities encounter challenges from the global outside world.

The most noticeable impact of global economic restructuring on rural areas is rural poverty and it has been one of the toughest issues faced by social scientists. Sociologists have paid much attention to the structural explanation for rural poverty and claim that the persistence and severity of poverty in rural America can be linked to a constrained opportunity structure that is the outcome of both past social and economic development policies and the current economic transformation. Rural communities are increasingly socially and spatially isolated from structural economic change. For example, traditional economic structure has been shifted from manufacturing industries to service ones, which has resulted in a greater inequality between large numbers of low-skill, low-wage jobs at one end and a few highly paid professional service jobs at the other. In addition, jobs have been scarce and unstable in most rural communities and people have to work different kinds of jobs or move to cities for better employment opportunities (Tickamyer and Duncan 1990).

In response to the poverty issue, social scientists have developed theories to explain the causes of poverty and the extent to which local residents are able to cope with it, such as neoclassical economic theory, bureaucratic power theory, and rural economic restructuring theory. Economic restructuring has triggered a momentous change in rural communities. Even during the postwar period of economic growth and prosperity, studies showed that rural areas remained poor and deprived (c.f., Tickamyer and Duncan 1990;

Humphrey and Wilkinson 1993; Freudenburg and Gramling 1994; Nord 1994; Fisher 2001).

For most scholars, the way to address rural restructuring is to find an alternative to improve the economic conditions in rural areas. Community economic development provides a good opportunity to explore issues of rural poverty in a community. The emphasis is on the opportunity for creating jobs, thereby raising the real incomes of residents. Hence, the community is seen as a collection of micro units, and these units, their interactions, and their relationships with external units comprise the community economic system. Since community plays a crucial role in explaining the rural economic opportunity structure beyond macro- and micro-level analysis, testing the relationship between community capacity and rural poverty has its theoretical meaning in sociological research. As Ashton and Pickens (1995) reported, communities that rely heavily on forest resources would suffer from a global timber industry and one way to avoid permanent poverty in these areas is to develop local economic variety and opportunities.

Since rural communities have increasingly engaged in their economic development, there are at least two different strategies adopted: community-oriented self-development and exogenous industrial recruitment (Summers and Branch 1984; Sharp et al. 2002; Crowe 2006). Exogenous industrial recruitment refers to a form of development that encourages outside investors and firms to locate their businesses in the rural communities where local residents might expect to have the power to set substantial management strategies to promote the community's common benefit (Summers 1977). However, when facing competition from global economic entities, footloose firms might relocate from one place to another for the sake of keeping costs down and maximizing

profits. Local existing businesses and residents might also face the problems of increased property taxes, user fees, or reduced service levels after successfully attracting outside firms to their communities (Loveridge 1996). Hence, the increased cost for local businesses and residents would affect the competitiveness of existing firms and reduce amenities for residents. As a result, rural communities might “suffer most of the economic and social costs of resource utilization/extraction, but enjoy few of the benefits” (Russell and Harris 2001:23).

Because the strategy of industrial recruitment for facilitating rural development has been criticized by scholars, an alternative strategy, self-development, has come with the awakening of community empowerment. Even though the main factors that spurred self-development were the exodus of factories and the stagnating economy in rural communities during the 1980s, we still cannot ignore the effect of the flourishing grassroots movement on the cultural narrative when discussing rural community development.

For many rural communities, self-development strategies offer potential benefits for maintaining or improving local economic activities. According to Flora et al., community-oriented self-development strategies “involve cooperation between the public and private sectors to create locally-controlled jobs and new sources of income” (1991:20). These authors also identified three characteristics of the self-development model: (1) involvement by a local government, (2) investment of substantial local resources, and (3) the control of enterprises or activities locally (Flora et al. 1991). As such, broad community involvement revitalizes local economic activities by financing and organizational effort. At the same time, local residents can choose businesses

according to characteristics that fit their demand closely and that will not damage their natural resources permanently, alter their landscape irrevocably, or change their lifestyle dramatically. For example, Flora et al. (1991) categorized community-oriented self-development projects based on major activities and found that the most popular projects involve tourism, arts and crafts fairs, and recreational or cultural activity. Following that, existing business retention and expansion and downtown revitalization are also seen as important projects (Flora et al. 1991). In other words, by developing clean/hospitality industry and revitalizing/individualizing their hometown, rural communities can re-launch local economic activities with the goal of sustainably utilizing their natural resources and community assets.

In addition, Ashton and Pickens (1995) argued that local economic factors, such as employment diversity, unemployment rate, and demographic structure have played an important role in influencing community stability. They found that counties with high employment diversity are better able to cope with changing economic conditions than less diverse counties. If their argument is reasonable, then less economically diverse areas will show more interest in their economic improvement as a goal for community development than they will in the other approaches. Also, Beggs, Haines, and Hurlbert (1996) examined the effect of the local community's economic context on community attachment, arguing that community context affects both the participation and sentimental dimensions of attachment that are related to local residents' sense of community and level of community engagement. That is, by looking at the community's economic context, we are able to understand whether the changing economic conditions reflect local residents' willingness to participate in public affairs.

Since economic considerations that are dominant in modern societies have also been prevalent in rural community development studies, local economic circumstances in rural areas are seen as structural disadvantages, contributing to the difficulty of reducing community poverty (Bradshaw 2003). Therefore, local residents' demand for a certain level of economic expansion to improve local economic conditions reflects the core theme of this economic development approach. For some scholars, the way to deal with rural restructuring is to find an alternative to improve the economic conditions in rural areas. Since areas that depend on a single source of income are vulnerable to economic restructuring, the key is to provide them with diverse sources of economic sufficiency.

Studies of community economic development illustrate how the structural disadvantages of community economic development influence the ways community members respond to local development paths and what strategies they adopt to solve problems. For example, according to Blakely (1994), communities have faced difficult and overwhelming circumstances in local economic development, and must be aware of the problems affecting the local economy and its consequences; local economic development and employment generation should be initiated at the community level to deal more effectively with these local problems facing the community (Blakely 1994:27). Also, Green et al. (1996) examined growth machine theory in order to assess how various individual characteristics influence attitudes toward land use controls and local economic development. Their findings revealed that permanent residents are more likely to consider economic development strategy as an important contributor to the quality of life; however, the longer residents live in the community, the less likely they are to support land use controls. Therefore, the economic development approach indicates that rural residents'

experiences with local economic disadvantages would increase their demands for local economic related development. This would suggest the following hypothesis: “Rural residents’ dissatisfaction with local economic conditions increases their level of support for economic-related development.”

Discussing studies of community economic development illustrates how macro level structural change influences community members’ response to local development issues and what strategies they adopt to solve problems. In this context, the problem-solving approach provides a straightforward linear model of community development: identify community problems, fix them, and then the community becomes better. Thus, when conducting a community study, attitudes toward local economic circumstance are an important resource to understand the patterns of change and in what ways local residents deal with them.

ENVIRONMENTAL CONCERNS AND COMMUNITY DEVELOPMENT

The second approach to community development specifically emphasizes the harmonious balance between environment and local society. Environmental problems have been an important research topic in sociology since the 1970s, primarily focusing on the social and environmental impacts of such threats as air and water pollution, waste management, land exploitation, and depletion of natural resources. As environmental threats increase, so does the awareness of the general public, and scholars have become interested in social factors that influence environmental awareness. This approach is an alternative to traditional sociological analysis, which focuses on internal aspects of the society only. The prior theoretical approach, economic rationality, follows a traditional

sociological paradigm to understand social facts by focusing on the world that human beings have created on their own and outside the laws of nature. In his *Division of Labor in Society*, Durkheim ([1892] 1984) proposed that social change results from the processes and consequences of interactions among subjective, structural, and technological forces—all of which are fundamentally rooted in human society. Along with the development of modern societies, Durkheim observed the significant role of rationalization in institutions, including the development of calculable, efficient means and procedures for facilitating science, technology, the market economy, formal organization, and the legal system (c.f., Murphy 2002). In other words, society manipulates instrumental rationality in order to maintain the societal workings and determine individual attitudes and behaviors.

This traditional sociological approach has been modified by adding nonsocial factors into analysis (see Catton and Dunlap 1978; also, Dunlap and Catton 1979; Catton and Dunlap 1980; Catton 1994; Dunlap, Michelson, and Stalker 2002). By considering the natural environment, an environmental orientation has been adopted to understand the relationships between social facts and the natural environment. The environmentalist approach contends that society would collapse if it experienced the processes of development without weighing the importance of environmental influence. Dunlap (1997) reviewed Durkheim's model of social facts argued that it is too narrow a view when we draw the boundaries of sociological concern around social phenomena as though the social facts are independent of natural rules and free from natural domination. In order to emphasize the balance between human society and the natural environment in the process of modernization, social scientists have developed a sociological paradigm to

understand social development without excluding the natural environment. The New Ecological Paradigm (NEP) includes the close relationship and intensive interaction between the natural environment and human societies (Catton and Dunlap 1978). The main concepts of the NEP are (1) while humans have exceptional characteristics (culture, technology, etc.), they remain one among many species that are interdependently involved in the global ecosystem; (2) human affairs are influenced not only by social and cultural factors, but also by intricate linkages of cause, effect, and feedback in the web of nature so that purposeful human actions have many unintended consequences; (3) humans live in, and are dependent on, a finite biophysical environment that imposes potent physical and biological restraints on human affairs; and (4) although the inventiveness of humans and the powers derived from their inventions may seem for a while to extend carrying capacity limits, ecological laws cannot be repealed (Buttel 1987:470).

It is possible to view the NEP as a response to Schnaiberg's (1975) societal-environmental dialectic, warning that humans should learn to control the demand and supply of economic activities in order to minimize environmental impact and to sustain natural resources. NEP scholars argue that the nature of human beings is merely one of numerous species interdependently linked in the global system; social facts are not solely caused by social and cultural factors, but are also caused by natural phenomena. The core theme of NEP is to argue that the natural environment should be seen as an inherent part of human society, and human beings are by no means unique from other species, and are therefore not exempt from the consequences of any ecological collapse (Arcury, Johnson, and Scollay 1986).

The environment-oriented sociology focuses on the tension between human societies and the natural environment through macro analysis of social structure, capitalist ideology, attitudes toward the environment and natural resources in modern consumer societies. Environmental attitudes, social structural forces and the development of modern technology are the three major forces influencing social change and development. In rural communities, this approach helps to understand the local environmental context, the requirements of community development and the relationship between these two foci.

While the NEP tends to extend sociological inquiries into the relationship and interaction between the natural environment and human societies, traditional sociological theories still provide insights into the study of environmental sociology. By borrowing the concepts of class analysis, Humphrey and Buttel (1982) argued that the different major social classes constantly interact with the natural environment with their interests focused on different time scales. The main assumption of their analysis is that resource scarcity would change the constellations of interests among these social classes. For example, the short-term environmental interests of the working class are to increase consumption and employment security by maximizing economic growth and resource flows. In contrast, their long-term environmental interests would focus on health improvement, job security, and environmental safety in response to environmental degradation (Humphrey and Buttel 1982:243-5). Therefore, we are able to use Marx's ideas to encompass capitalism as a cause of environmental degradation and other threats to the health and welfare of workers and to the need for political economy to mediate relations between society and nature (Schnaiberg, Pellow, and Weinberg 2003).

In brief, this environment-oriented sociology focuses on the tension between human societies and the natural environment. It argues that environmental attitudes, social structural forces and the development of modern technology are the three major forces influencing social change and development. In rural communities, this approach helps to understand the local context, needs of community members, and the relationship between these two foci. Theoretically, this approach suggests that the natural environment can be preserved and protected for sustainable development through community members' self-management (Daniels and Walker 1996; Berkes and Folke 1998; Davenport and Anderson 2005). The community can be seen as a field in which social structure closely intertwines with the natural environment for the community betterment. Hence, in order to emphasize the balance between the sustainability of the natural environment and rural communities' well-being, the interdependent relationship between them is a crucial factor.

In order to examine ideological shifts from human exemptionalism to ecological orientation, Dunlap and Van Liere (1978) designed the New Environmental Paradigm Scale, a Likert-type scale that measures the environmental attitude of the general public, based on the main concepts of the NEP. The original NEP scale and revised versions have been used to assess the ecological worldview of the general public, policy makers, or experts on environmental quality and policy, natural resource management, sustainable development, and similar issues. Since its original design and validation, the NEP scale had been used and revised by a number of researchers. It is widely applied to measure respondents' ecological worldview among various social groups, such as age, gender, ethnicity/race, or occupation, in the United States, Canada, United Kingdom, Germany,

and Japan (Albrecht et al. 1982; Geller and Lasley 1985; Pierce et al. 1987; Caron 1989; Edgell and Nowell 1989; Arcury and Christianson 1990; Noe and Snow 1990; Dalton et al. 1999; Tu 2002; Cordano, Welcomer, and Scherer 2003; Gelissen 2007; Lundmark 2007). The measures of the internal reliability of the NEP scale were acceptable to most researchers; however, they also find that this scale consists of more than one dimension in terms of ecological worldview. Therefore, there is debate over whether the original NEP scale could properly be used to measure the respondent's ecological worldview.

The influence of environmental attitudes on local community development is also examined in some empirical studies. For example, Kaltenborn et al. (2008) examine local residents' environmental attitudes and their attitude towards community development as a recreational destination. They found that residents with a higher environmental awareness are less supportive of future plans for development of the tourist industry than those with lower environmental awareness. The development approach guides this research to understand the level of support for the New Ecological Paradigm in rural areas and to what extent rural residents' environmental attitudes and behaviors influence them to focus on environmentally conscious development alternatives (Corral-Verdugo and Armendáriz 2000). Therefore, the environmental development model suggests the following hypothesis: "Rural residents that display environmentally friendly attitudes and behaviors will tend to support development alternatives that have an environmental focus."

COMMUNITY AS A FIELD FOR DEVELOPMENT

The third community development approach focuses on the community capacity to cope with any substantive community problems, whether they are economically or

ecologically oriented concerns. Since the late 1950s, community scholars have relied less on economic dominance as an ideology and on instrumental rationality to solve community problems, and extended the meaning of development in rural areas to a more broad sense (see Kaufman 1959). These scholars turned their attention from an economic orientation to the social structural perspective, arguing that a sound configuration of social relations and positions is the fundamental development goal. They contended that each individual community problem is not independent from all the others and should be considered within the umbrella of socioeconomic context. Therefore, the community should be seen as a whole, rather than as the sum of its parts, wherein the interconnections among individuals, groups, associations, and organizations form concrete social forces to cope with external and internal changes facing the community (Fawcett et al. 1995).

In order to analyze the influence of social relationships on community development, some scholars have adopted a social interaction and process perspective on community development study and explored how the content of interpersonal ties affects the consequences of community development in rural areas. For example, Kaufman (1959) argued that development must go beyond planned economic programs and place more priority on improving and increasing community residents' identification with the locality in order to get them involved in the process of local development. This process empowers the local community. To carry out such identification with the locality, collaborative action and mutual identity are emphasized prominently in this theoretical orientation.

Elaborating extensively on Kaufman's interactional perspective on community, Wilkinson (1970) tied social structure in to the context of community development. He claimed that social structure is defined in an interactional context as observable relationships built up through an action process by members. The role and position of members in a given interactional network are identified and classified to evaluate the pattern of the structure, which determines the continuity of social processes and the direction of social change. It is a network structure-building orientation of community development that focuses on integrative and generalizing networks in the local society (Wilkinson 1970, 1972). This interactional orientation of community development argued that the instrumental orientation of development sees project achievement as the ultimate goal of community development, but, in fact, development should be seen as a dynamic, ongoing process. There are inherent problems behind material demands and physical construction, and there are no substantial, permanent solutions for them. Planned programs for community development are only one of many solutions to achieve social betterment and should focus on building the community field in which the collaborative capacity to pursue locality-oriented common interests is more crucial to the process of community development than solving the immediate physical problems.

This interactional orientation of community development corresponds to Habermas's (1975) argument in his classic book *Legitimation Crisis*. By using the term "lifeworld," Habermas emphasized that effective communication means that each social member can exchange and integrate different cultural contexts, knowledge, ideology, and life experience into a cultural infrastructure that penetrates the boundary of social systems and modifies the instrumental rationality, and therefore avoids the crisis of legitimation.

Habermas's primary concern was his belief that societies require social integration and he argued that with the development of advanced capitalist societies, the core integrative function of social members' communication has been weakened due to the instrumental dominance of structural factors over personal value-commitments. If societies are regulated by social institutions without the opportunity to communicate among themselves; a legitimacy crisis comes into being and causes social disorder (Habermas 1984). Therefore, communication action is similar to Wilkinson's interactional field theory at the community level. Wilkinson argued that social interaction is purposeful action to improve local social networks in order to strengthen the community's capacity for collective action. The substance of community development is social interaction from which members form a sense of belonging and share their common interest in a territory. Wilkinson (1986) argued that empowered collective-oriented community action is the fundamental basis for community development and that community attachment plays an important role in fostering such processes of empowerment. Therefore, exploring the determinants of local residents' attachment to their communities becomes an essential step to building up local capacity to deal with community development issues.

Meanwhile, rural social scientists have also drawn increasingly on studies of personal feeling change on their local communities by examining two models of community attachment in modern society, the linear-development and the systemic model in rural areas (Kasarda and Janowitz 1974; Lowe and Peek 1974; Greider and Krannich 1985; Beggs et al. 1996; Curtis White and Guest 2003). These studies ask a common question: would traditional close social involvements, such as community attachment, be enhanced or impaired when external factors impact the community? Two

models, the linear-development and the systemic model, are developed to explore the meaning of community attachment in modern societies. The former model is developed from traditional sociological thinking, proposing that increasing population size and density are key independent variables that influence local community attachment; the latter one objected to such an oversimplified model, contending that local community is a complex system of friendship, kinship, and associational networks rooted in family life and on-going socialization processes and that community attachment should be seen as the product of these relationships. Therefore, it is not urbanization or industrialization that directly changes the relationships among local residents or their sense of community. It is the different opportunities and contexts for social interaction leading to different social dynamics that alter the connections between individuals and the society.

The social structure perspective on the development of community configurations and social structure should be analyzed in the context of community attachment and social relationships. To operationalize community attachment, several methods have been developed in a variety of different studies. For example, Beggs et al. (1996) used a name generator method to gather information on respondents' social networks and analyzed how closely the respondents interacted in daily life, as well as the strength and duration of their social ties in order to define community attachment. Others, like Brehm, Eisenhauer, and Krannich (2004), adopted multi-dimensional methods to measure community attachment via collective action indicators (including land-based production and conservation involvement, social involvement, and economic/development involvement) and natural environment attachment indicators. By considering two dimensions of community attachment, they found the concept of community attachment

cannot be seen as simple social interaction, but as well-developed community cohesion through the linkage between individuals, organizations and their locality.

Other community scholars have also noticed the importance of members' collaboration to theories of the perspectives of community development. For example, Rothman (1979:26) contended that locality development should focus on "the broad participation of a wide spectrum of people at the local community level in goal determination and action." According to Rothman's (1979) argument, such broad citizen participation is not only instrumental in solving specific community problems, but also for more general activities, such as democratic procedures, voluntary cooperation, community empowerment, and development of indigenous leadership. This locality development approach emphasized the whole local system's capacity for building and maintaining in which a fundamental network structure should be built up by establishing cooperative relationships among groups by creating a self-help community problem-solving system and stimulating residents' interest and participation in community affairs. These goals of locality development emphasized community organizations and the harmonious interrelationships among them.

To integrate the arguments of community development as a process of interaction, Wilkinson (1991) developed interactional field theory to argue that the ultimate goal of community development is to build up a community field where the community capacity for collective action can be created for the common good and social betterment. Forms of interaction include formal and informal social contact within organized and unorganized social activities. Through such purposeful and non-purposeful interactions, social forces are raised to respond to local issues. Specifically, a community field is manifested in the

interactional structure among local residents, groups, and organizations contributing together to the accomplishment of specific objectives of community projects. The central focus of community field theory is on structurally oriented interactions through which communication occurs and fosters positive and cohesive relationships among community members. Wilkinson (1991) contended that the field of harmonious relationships facilitates an empowered community in which local residents initiate a process of collective actions to deal with economic, social, cultural, or environmental issues.

The interactional field theory of developing community capacity has been adopted by many community scholars as the guideline for community development studies. In their studies, community scholars tend to examine the extent to which a community capacity can be developed and on areas in which local residents can improve their lives, such as a stable labor market or a higher quality of life. Obviously, in the subfield of social change and development, community has been seen as a unique entity where local residents should work together in unity to cope with external or internal social change in response to development issues. To extend this concept, Flora et al. (1997) examined the relationship between an entrepreneurial social infrastructure and economic theoretical approaches embedded in the community embeddedness and collective action. Their research confirmed previous studies that indicated that communities with dense social networks are more likely to be successful in generating local economic activity.

In addition, Sharp (2001) analyzed community by for examining the concept of community field perspectives in the relationships between network structure and development. He found that these network structures can help community members to cooperate with local organizations, to access resources, to get information flowing among

them, and to identify attributes of the community that enhance general capacity for local action. Pavey et al. (2007) also adopted interactional field theory in the community research field. Pavey contends that the ultimate goal of community development is to build the community's capacity to manage its own world based on members' own meaning systems. They focused on exploring whether sound social relationships were a driving force to stimulate community capacity and strengthen self-governance on community issues. In their findings, interactional field theory was confirmed by the positive relationship between the community field and economic development through horizontal linkages among community members.

The social development model contends that close social relationships in traditional communities should be built upon and preserved in the process of development (Wilkinson 1984). According to the development model, changes of social distance and degrees of community attachment among local residents influence the potential community cohesion and collaborative action that can be taken to approach the community common good. Some empirical studies have examined this argument. For example, Sharp (2001) focused on selected features of small-town social structure and its relationship to the community capacity for local action. Drawing on the interactional perspective, community network analysis, and community power research, he proposed an approach to measuring and evaluating the community field to understand more clearly the relationship between community structure and the capacity for local action. His findings complement the thinking on community social capital and social infrastructure and reveal that social relationships and local residents' interaction structure are importantly associated with the community capacity for local action.

These selected examples of community development study establish the foundation for a unique theoretical argument and illustrate that development should be focused on the community itself, rather than relying solely on neo-classical economics' individualism and political-economics' macro structuralism. These scholars optimistically believe that community development is as a means to an end, a process of guiding for a particular purpose that is eventually helpful to the local community. Furthermore, community development has been realized as a social movement, a process of empowering community that tends to build up its own organizational structure, accepted procedures, and active practitioners within its territory. It stresses and promotes the idea of community development as interpreted by its local residents. In response to such an argument, we might ask that, in the process of building horizontal network ties, hierarchical inequality of power within class, gender, or other social structures could be minimized in order to pursue empowerment of each individual. Traditional community researchers simplify community development as the process of community empowerment in which community capacity is crucial for a better life in the community. The social development model suggests the following hypothesis: "Rural residents' close social relationships within the local community influence them to view community empowerment as the primary concern when the local community faces rapid social change."

RESEARCH FOCI: CONCEPTUAL FRAMEWORK

This section briefly summarizes the logic of study approaches in the field of community development, and then presents a general research expectation and research

hypotheses derived from the conceptual orientation that will guide the data analysis design and procedures used in the study. Community development obviously has a variety of meanings to local residents and their personal attitudes toward the vision of their community future is influenced by their attitudes and opinions on social, economic, and environmental issues facing the local community, as was discussed earlier in this chapter. To summarize, the basic themes found previously, I have observed that community scholars have developed various research approaches focusing on the economic, environmental, or social dimension of community development. These three development models provide important sociological lenses through which to understand how scholars and practitioners view modern rural community development. For those who take a rational view dominated by economic considerations and community development focused on social betterment in response to external social and economic changes. The ecology-oriented approach adds a crucial element to the study of social development and urges that the natural environment should be included when dealing with development issues in a locality; and community field theory emphasizes that community capacity as an agency to react to social change comes from the strength of collaboration within communities.

By borrowing from the concepts of three research models of community development, this dissertation primarily focuses on individuals' attitudes toward their local community development through the lenses of all three models. By examining the research hypotheses, this study analyzes rural residents' subjective economic, environmental, and social experiences in local community life to determine preferences

for community development alternatives as guided by the economic, ecological, or social development model.

My analytical strategy is as follows: the descriptive statistics of macroeconomic structure change in study areas from the U.S. Census Bureau data will be presented as the background of understanding how rural communities cope with external economic structure changes (U.S. Census 1950-2000). The indices include population change, industry and occupation statistics, poverty, and household income characteristics. By analyzing this macro change I am able to understand the extent to which historical economic structure changes potentially influence local residents' attitudes toward development alternatives.

In order to examine the research hypotheses in terms of the relationship between local residents' general attitudes toward the current conditions and local community attitudes toward development alternatives, as well as individuals' socio-demographic characteristics logistic regression modeling is applied. In three logistic regression models (focusing on economic, environmental, and social development), individuals' major concerns with regard to community development issues are used as the dependent variable. Independent variables, such as the respondents' degree of satisfaction with local economic conditions, respondents' environmental attitudes, behaviors affections for local community and social distance with neighbors, are used to examine the economic, environmental, and social development models through three research hypotheses.

Resident attitudes towards community development preferences form the core theme in this dissertation. Therefore, the significance of research is to examine observable social and economic changes that shape individuals' attitudes and opinions

towards local community circumstances in response to developments their own expectations and attitudes toward future community development alternatives.

Guided by these three development models, this research tries to understand the extent of these approaches as they are applied in rural community development by examining three research hypotheses, which are:

- (1) Rural residents' dissatisfaction with local economic conditions increases their support for economic related development;
- (2) Rural residents that display environmentally friendly attitudes and behaviors will tend to support development alternatives with an environmental focus;
- (3) Rural residents' close social relationships within the local community influence them to view community empowerment as the primary concern when the local community faces rapid social change.

CHAPTER III

METHODOLOGY

This dissertation focuses on the manner in which social and economic contexts influence the attitudes of rural people toward local community development alternatives by analyzing their attitudes and opinions on social, economic, and environmental issues facing the local community, as I have discussed in Chapter II. In order to examine the theoretical arguments linking residents' attitudes and rural community development, an empirical research procedure has been developed. In this chapter I develop several sections that explain the research design and procedures tied to the conceptual frameworks guiding this research. The first section describes the overall geographic and socioeconomic backgrounds within the four study communities. The second section presents the data collection procedures for the quantitative analysis component of this study. The third section describes the conceptualization and operationization procedures used for each of the outcome variables and predictors applied in the statistical models that were used. The last section focuses on the analytic approach and techniques used for the quantitative portion.

STUDY DESIGN

The empirical analyses in this research were from survey data collected within four rural Utah communities during the summer of 2008: Kanab, Moab, Price, and Richfield. These four areas were selected based reasons including internal and external structure changes, increased senior populations, growing recreational activities, and difficulty in maintaining stability over the last five decades, also known as energy-

development conflict. To test the three development approaches, the communities selected have unique features in response to macro influences and on face validity link to one or more on the development approaches drawn upon in this study.

Kanab, with its increased senior population, and Richfield, with an energy-development conflict, face social welfare and economic changes and are appropriate to study through the lens of the economic development framework. Likewise, Price had been a relatively stable city in the past years, providing a base community of traditional social relationships and testing the social development focus. Additionally, Moab, with abundant natural resources and high landscape amenities and recreation values, is an appropriate setting for exploring whether the development paradigm shifts to environmentalism.

As to their similarities and differences, these four communities are in rural areas and community development efforts have emphasized improving the economy and quality of life. Historically, there had been at least four main development programs implemented in these communities including, efficient physical infrastructure and transportation systems. These development programs provide rural residents with convenient lifestyles, economic development projects that provided loans to businesses through banks and community-managed lending pools, information exchange and technical support programs that facilitated effective and efficient management of agriculture-related activities, and citizen participation projects that helped build grassroots capacity to create opportunities for local residents' public participation.¹ The

¹ These are the core development programs developed in the U.S. Department of Agriculture and Rural Development projects. Retrieved August 07, 2009 (<http://www.rurdev.usda.gov/rd/index.html>).

purpose of these rural development programs was to support a way of life in which people can be served by the convenience of modern technology, but can also maintain important social norms within the community. Therefore, my research was designed to examine whether these modern improvement programs properly reflect the desires of local residents and to what extent their attitudes toward development alternatives can be explained by local economic, environmental, and social circumstances.

THE COMMUNITIES

Kanab

Kanab is a community in Kane County, Utah (see Map in Appendix A). This town is located in the western Colorado Plateau on the “Grand Circle,” centrally located among Bryce Canyon National Park, the Grand Canyon North Rim, and Zion National Park. Also, the largest animal sanctuary of the United States is nearby. According to the United States Census Bureau (2000), Kanab has a total area of 14.4 square miles, of which, 14.0 square miles of it is land and .4 square miles is water. The population was 3,564 and population density was 254.2 people per square mile as of the 2000 census (USCB 2000). The median income for a household was \$35,125, and the per capita income was \$16,128. About 4.0% of families and 5.6% of the total population were below the poverty line. The census data showed that this town’s economic base is primarily in the service industries and natural and recreational activities (Table 1). The city government relates that Kanab became a tourist center for visitors in the 1920s and 1930s as a gateway to Bryce Canyon, Zion, and Grand Canyon national parks (Bradley

2004). Lake Powell, one of Utah's major recreational sites, attracted new services industries connected with boating and fishing in the area.

Moab

Moab is located south of the Colorado River on the Colorado Plateau (see Map in Appendix A). According to the United States Census Bureau in 2000, the city had 4,779 residents with a population density of 1,313.1 people per square mile. The median income for a household was \$32,620, and the per capita income for the city was \$16,228. About 12.0% of families and 15.7% of the population were below the poverty line. In the early 20th century Moab's economy was based primarily on agriculture, followed by mining. High-economic value minerals, such as uranium and vanadium, were discovered here in the 1910s and 1920s. In the 1950s Moab became the uranium capital of the world after geologist Charles Steen found a rich deposit of uranium ore south of Moab (Bearnson 2004). However, with the end of the Cold War, Moab's uranium boom declined. By the early 1980s nearly all the uranium mines had been closed and many people left the city. In the 1970s tourism replaced mining as an important and increasing economic resource in the community. In addition, in recent years Moab has been seen as a location for a second home for many seasonal residents. This has raised challenges for the local residents with regards to population size and increased value conflicts.

Price

Price is located at the northwestern edge of the Colorado Plateau (see Map in Appendix A). In 2000, there were 8,402 people with a population density of 1,979.7 people per square mile. The median income for a household was \$31,687 and the per

capita income for the city was \$14,313. About 11.4% of families and 15.0% of the population were below the poverty line. The way of life in Price changed dramatically with the completion of the railroad in 1883. Price was rapidly transformed from an isolated farming community to the commercial area of Castle Valley (Johnson 2004). This diversified population has remained today and makes Price one of Utah's most culturally complex communities. The economy of Price is highly tied to the coal industry and has been through multiple boom and bust cycles.

Richfield

Richfield is a town in Sevier County in south-central Utah (see Map in Appendix A). Sevier County has been described as “rural diversified” because of its convergence of agricultural, retail and industrial activities. Richfield is remote from larger cities; however, because of its remoteness and location on major transportation corridors Richfield has become central Utah's regional shopping and commercial capital. Many people living in this region travel here for shopping and recreational purposes. According to the United States Census Bureau, in 2000 Richfield held 6,847 people with a population density of 1,297.4 people per square mile. The median income for a household in the city was \$36,024 and the per capita income for the city was \$14,320. About 7.0% of families and 9.3% of the population were below the poverty line. Richfield has a municipal airport, a modern hospital, and a care center, as well as several local media serving the area. Educational institutions are well-developed. In addition, Richfield has many associations and organizations and there are twenty churches of various

denominations adding to community life. It is a relatively developed rural town with modernized facilities (Busk 2004).

DATA COLLECTION PROCEDURES

After identifying the four target communities of Kanab, Moab, Price, and Richfield, data pertaining to a wide range of attitudinal and perceptive indicators of community-related issues were collected via self-administered mail questionnaires in the summer of 2008. The questionnaire was designed and administered following Dillman's Total Design Method (2000). Survey booklets were developed and delivered via first-class mail to a random sample of households within each study area.² Respondents received a pre-notification letter, survey booklet, and follow-up reminders to complete the survey. A second survey booklet was mailed to non-respondents.

At each household in each community that was sampled, a response was requested from a designated person in the household. The designated name list in each community was purchased from a private data quality and services company, *Experian Marketing Services*, on May 08, 2008. This private, profit-oriented company provides marketing information and credit checking to its clients by developing customer databases, systems, and analytical skills. Its principal lines of business are credit services, marketing solutions, decision analytics, and interactive services. This survey research relied on this private company to generate mailing lists because of its wide coverage of American households and recipient reliability.

² A complete survey instrument is presented in Appendix B.

Table 1. Demographic Information of the Four Communities Studied

	Kanab	Moab	Price	Richfield
Area (mi ²)	14.1	3.6	4.2	5.3
Elevation (ft)	4,970	4,025	5,957	5,280
Population	3,564	4,779	8,402	6,847
Population Density (ppl/mi ²)	254.2	1,313	1,979.7	1,297.4
Ethnic Distribution:				
White	96.8%	90.35%	90.70%	94.4%
Native American	N/A	5.46%	N/A	3.3%
Other	3.6%	4.2%	9.30%	2%
Median Income	\$35,125	\$32,620	\$31,687	\$36,024
Per capita income	\$16,128	\$16,228	\$14,313	\$14,320
Average household size	2.6	2.4	2.6	3.0
Percent below poverty line				
Household	4.0%	12.0%	11.4%	7.0%
Individuals	5.6%	15.7%	15.0%	9.3%
Children	4.6%	19.1%	16.3%	10.5%
Seniors	4.9%	10.5%	11.1%	9.4%
Occupational Distribution:				
Management/business/financial	15.4%	11.8%	6.7%	11.1%
Professional and related	12.8%	19.3%	18.5%	17.0%
Service	17.7%	28.7%	21.2%	18.6%
Construction/extraction/maintenance	14.5%	9.8%	15.2%	8.2%
Sales/office	24.9%	21.2%	24.6%	28.9%
Production/transportation/material moving	13.8%	8.7%	13.9%	14.9%
Farming/fishing/forestry	.8%	.5%	.2%	1.3%

Sources: U.S. Census Bureau. Retrieved June 29, 2009
(<http://www.census.gov/main/www/cen2000.html>).

In order to meet the research purpose and to acquire the maximum coverage of the name list in each target community, this survey study set three parameters to randomly select the target/potential respondents: zip/SCF code, age (20 or older) and dwelling type (single and multi-family dwelling unit). In the end, a total of 246 questionnaires were returned from Kanab, Utah, 229 from Moab, Utah, 234 from Price, Utah, and 282 from Richfield, Utah, resulting in response rates of 35.81%, 32.95%, 34.26%, and 40.63%, respectively. The total sample size in this study is 992 cases.

MEASUREMENT PROCEDURES

Dependent Variables

In order to examine the research hypotheses stated above, the research variables corresponding to the concepts used in those hypotheses were measured by means of survey questionnaires in the four selected communities throughout the state of Utah. The dependent variables measured were “support for economic development focus,” “support for environmental development focus,” and “support for social development focus.” These three dependent variables were used to describe the respondent’s major concerns with regards to community development. Three questions asking the respondents about local community issues were used to measure these three variables:

- (1) What do you consider to be the most important issue affecting the quality of life in your community?
- (2) Have you noted any major positive and negative changes in the county that have occurred over the last five years?
- (3) Do you envision additional changes occurring in the next five years?

The answers from these three open-ended questions were examined using content analysis to identify each respondent’s preference in community development based upon my theoretical framework: economic development focus, environmental development focus, and social development focus.

Each respondent was given a code, based on answers to the three open-ended questions. The codes of economic, environmental, and social development foci correspond to a series of general rules, which include when a participant mentioned economic development issues, community infrastructure, taxes, or job opportunity issues,

the participant was given a code, 1, indicating an economic development orientation, otherwise, 0. When a participant mentioned air and water quality, sustainability development, or other environmental issues, he or she received a code, 1, indicating environmental orientation. Last, a code, 1, indicating a social orientation was assigned when a participant mentioned factors including social conflict, trust, social relationships, population growth, newcomers, and so forth. Open-ended question format means that each respondent's attitude towards the three development approaches could only be measured as a dichotomous variable (either "present" or "absent"). Meanwhile, how each respondent would be coded either present or absent economic, environmental, and social focus development depended on his or her answers. In other words, these three dependent variables were not mutually exclusive. A summary of percentage distribution of three development foci in four communities are presented in Appendix D. This summary table in Appendix D releases information that the average percent of respondents focusing on social development only is 40.02% across four communities, for environmental focus only is about 5%, and for economic development only is about 19%. It shows social development focus was prevalent in all four study areas. In contrast, that the very few respondents across the four communities mentioned all three development foci together (.60%), showing there were internal tensions among economic, environmental, and social development issues among local residents. To explore the tension between different development focus will be one of goals in this study.

Additionally, I selected a small random sample size ($n = 4$) of graduate students in the sociology department to review the text and follow instructions mentioned above to code the attitudes displayed in the participants' responses. By collecting their coding

results, I conducted an analysis of the reliability of the coding procedure ($\alpha = .89$) to make sure of consistent coding from different interpreters.

The content of the responses to these open-ended questions represented attitudes toward the current issues occurring in the community and reflected what issues the respondents were concerned about and their expectations for future development. The personal preference for a specific community development alternative was formed in response to what issues each individual was aware of, and the extent to which she/he was able to act or react. Therefore, with theory-driven conceptualization of development, the content of the responses to the three community development-related open-ended questions provided realistic data for this study.³

Independent Variables

I designed several categories of variables used in the research model of local resident community development attitude. The variables in these categories have been applied in prior research to analyze their effects on the three major development frameworks discussed in Chapter II. Before going into development-related variables, several aggregated variables should be introduced through factor analysis based upon community development theory-driven arguments and survey questions asked in the questionnaire.⁴

³ Consider the possible problem of collinearity between three development foci, I conducted Person's r test, and found the correlation between economic and environmental focus was $-.19$ at 99.99% confidence level, correlation between economic and social focus was $-.26$ at 99.99% confidence level, and correlation between environmental and social focus was $-.05$, but not significant. Since the correlations between three development foci were relatively low, the concern of collinearity between them was not a problem needed to deal with.

⁴ Index of coding variables is shown in Appendix E.

Factor analysis for development-related variables. Respondents' satisfaction with quality of life and community development strategies are influenced by macro factors and may be related to their individual preference toward community development. Two sets of questions were included in the survey to measure their satisfaction with these two dimensions of macro factors. To assess satisfaction with quality of life in the community, I listed 16 items with a one to five Likert-type scale ranging from 1, "strongly dissatisfied," to 5, "strongly satisfied." By using principal factor analysis, I was able to extract common factors from these 16 items to examine construct validity before processing advanced statistical tests on the relationship between macro factors and individual preference for community development approaches.

Factor analysis is in the family of latent structure analysis and its theoretical argument proposes that each observable variable is composed of common factors and a unique factor and the number of common factors is less than the number of total observable variables, while each observable variable has one unique factor. The general model of factor analysis is shown with the equation:

$$Z_j = a_{j1}F_1 + a_{j2}F_2 + a_{j3}F_3 + \cdots + a_{jm}F_m + U_j \quad [1]$$

where Z_j represents the standardized score of the j^{th} variable; F_i represents the common factor; m denotes the total number of common factors ($m \leq j$); U_j represents the unique factor for Z_j ; and a_{ji} denotes the factor loading (see Kim and Mueller 1978; Duntelman 1989; Basilevsky 1994).

In the equation of factor analysis, ideally each individual factor loading (a_{ji}) is either extremely large or extremely small in order to group each observable variable by a

few common factors. Theoretically, we could have the smallest number of common factors when the relationship between unique factors (U_j) or between the common factors (F_i) is independent.

In order to determine the number of common factors in this equation, two indices are used: communality and eigenvalue. Communality is the sum of squares of the factor loading (a_{ji}) of all common factors, representing the percentage of variance of an observable variable explained by the common factors (see Table 2). We can determine the relationship between each observable variable and the common factors by the value of communality (h^2) and when $h^2 = 1$ then the all common factors perfectly explain the variance of the observable variables.

The eigenvalue represents the sum of the squares of the factor loading of each common factor for all observable variables. In factor analysis, the factor with the largest eigenvalue would be identified first and then the next factor with the second largest eigenvalue and so on, until all the common factors are identified (here $m \leq j$). The purpose of factor analysis is to determine the fewest number of common factors with the largest explanatory power over the variance of all the observable variables (see Kim and Mueller 1978; Duntelman 1989; Basilevsky 1994).

Based on the above discussion of factor analysis, 11 out of the 16 observable variables in satisfaction with quality of life were composed of three main common factors, namely, economic satisfaction, social satisfaction, and environmental quality (Table 3 and Figure 1). These three common factors are able to explain 51.85% of total variance

of 16 observable variables (Table 3). The process of determining common factors is presented below.

Table 2. Diagrammatic Explanation of Factor Analysis

Equation of factor analysis					
$Z_1 = a_{11}F_1 + a_{12}F_2 + a_{13}F_3 + \dots + a_{1m}F_m + U_j$					
$Z_2 = a_{21}F_1 + a_{22}F_2 + a_{23}F_3 + \dots + a_{2m}F_m + U_j$					
$Z_3 = a_{31}F_1 + a_{32}F_2 + a_{33}F_3 + \dots + a_{3m}F_m + U_j$					
\vdots					
Variable	Factor 1	...	Factor m	Communality (h^2)	Unique factor (d^2)
X_1	a_{11}	...	a_{1m}	$a_{11}^2 + \dots + a_{1m}^2$	$1 - h_1^2$
X_2	a_{21}	...	a_{2m}	$a_{21}^2 + \dots + a_{2m}^2$	$1 - h_2^2$
\vdots					
X_j	a_{j1}	...	a_{jm}	$a_{j1}^2 + \dots + a_{jm}^2$	$1 - h_j^2$
eigenvalue	$a_{11}^2 + \dots + a_{j1}^2$		$a_{1m}^2 + \dots + a_{jm}^2$		
explained variance	$(a_{11}^2 + \dots + a_{j1}^2) / j$		$(a_{1m}^2 + \dots + a_{jm}^2) / j$		

Table 3. Results of Factor Analysis for Satisfaction of Quality of Life

Factor	Name	No. of var	Eigenvalue	Explained variance	Cumulative explained variance	Cronbach 's α
1	Economic satisfaction	5	5.15	32.20%	32.20%	.84
2	Social satisfaction	4	1.84	11.50%	43.70%	.72
3	Environmenta l concern	2	1.30	8.14%	51.85%	.77

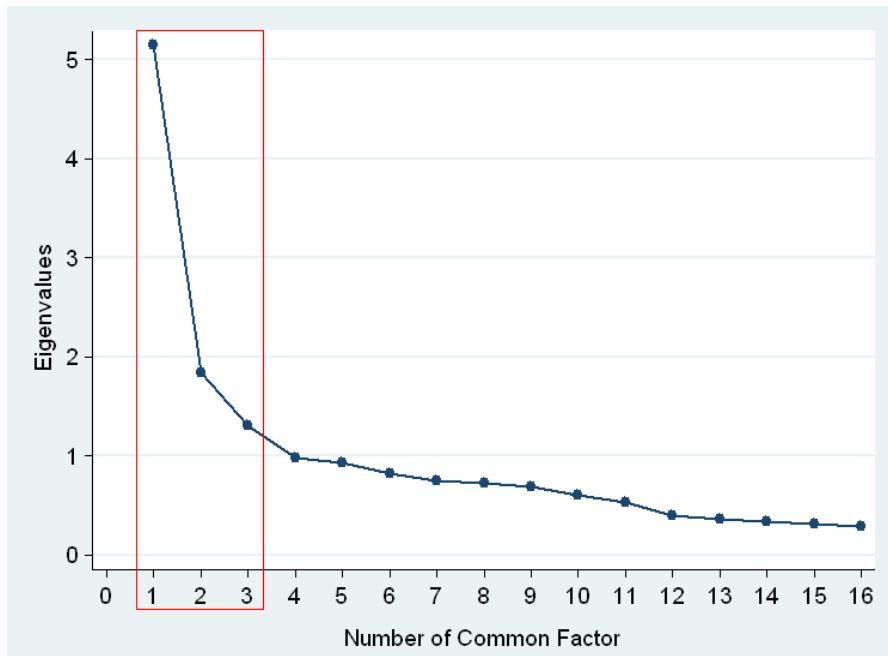


Figure 1. Scree Plot of Eigenvalues for Satisfaction of Quality of life

By implementing principal components analysis and the varimax rotation method, the results of factor analysis of the satisfaction with quality of life variables are presented in Tables 3, 4, and Figure 1. From Figure 1 we can clearly see that three common factors were suggested by the Scree plot of eigenvalues, where the first three eigenvalues are larger than 1. Also, from Table 3 we can observe the eigenvalue of the first factor is 5.15 and explains 32.20% of the variance in the 16 observable variables. In addition, the Cronbach's α of the five variables grouped in factor one is .84, which shows high internal consistency reliability among these five variables (the factor loading of each variable shown in Table 4). These five observable variables extracted (factor loading $\geq .60$) were job opportunities, job satisfaction, financial security during retirement, current income level, and job security. Therefore, the first factor, named "economic satisfaction,"

aggregated these five components to measure how satisfied respondents are with the economic aspects of their condition.

The second factor contained four variables with eigenvalue = 1.84, explaining 11.50% of the variance of all the observable variables (Table 3). The Cronbach's α of four variables grouped in factor two is .72, still showing high internal consistency reliability. These four variables were family, friends, marriage, and religion/spirituality. Since these four variables represented the concern with social relationships, the second factor was named "social satisfaction" in order to measure how satisfied respondents are with their social satisfaction with the community.

The last factor contains two variables and its eigenvalue is 1.30, explaining 8.14% of the total variance of the 16 observable variables (Table 3). Based upon the value of Cronbach's α (.77) for these two variables grouped in factor three, these two variables showed high internal consistency reliability, indicating a common measurement. Since the two variables asked about the respondents' satisfaction with "clean air and water" and "greenery," I named the third factor "environmental concern" as an aggregated measure to examine how satisfied respondents are with environmental quality in the community.

In terms of the respondents' satisfaction with community development strategies, two common factors were identified in Figure 2 and the cumulative explained variance of the eight observable variables by these two common factors was 63.86% (Table 5). In Table 5, we can observe that the eigenvalue of factor one is 3.97, explaining nearly 50% of the total variance of eight observable variables and four variables were grouped here with Cronbach's α = .79.

Table 4. Rotated Component Matrix for Stratification of Quality of Life

Obs. Var.	Common Factor		
	1 (economic satisfaction)	2 (social satisfaction)	3 (environmental quality)
Job opportunities	.78	.09	.10
Job satisfaction	.75	.25	.06
Financial security	.75	-.01	.07
Current income	.71	.09	.02
Job security	.70	.11	.15
Your family	.07	.80	.09
Your friends	.09	.80	.16
Your marriage	.12	.61	.19
Your religion	.19	.60	.08
Greenery	.04	.13	.87
Clean air and water	.12	.10	.85
Your health	.34	.44	.05
Your community	.38	.42	.25
Your education	.54	.19	.20
Your housing	.41	.20	.42
Your free time	.33	.34	.28

Notes: factor loading (only $\geq .60$ will be extracted).

The four variables in factor one were small business development, retaining and expanding existing business, tourism development, and industrial recruitment. The factor loading of these four variables was larger than .70 (Table 6). I named factor one “business development,” and this aggregated variable can be used to measure how satisfied respondents are with community business development strategies.

In addition, a second common factor produced an eigenvalue of 1.14, explaining 14.26% of the total variance of eight observable variables, and three variables were grouped in this common factor with Cronbach’s $\alpha = .80$.

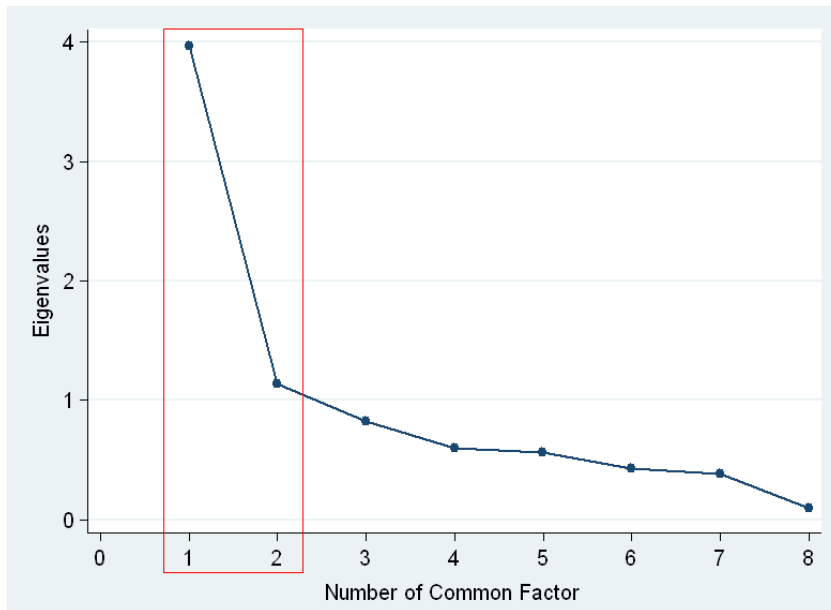


Figure 2. Scree Plot of Eigenvalues for Satisfaction of Development Strategies

These three variables were enhancing agricultural business, expanding agricultural production, and expanding resource extraction. Since these three variables measured the respondents' satisfaction with agricultural business, production, and resource extraction, the second common factor was named "primary sector development" as the other aggregated variable to measure how satisfied respondents are with primary sector development strategies in their community (Table 6).

Economic development-related variables. In the prior chapter, I mentioned an approach to local economic development developed by Blakely (1994). His theory of local economic development emphasized building quality jobs and new economic institutions, a quality environment, and a knowledge-based economy (see Blakely 1994:62).

Table 5. Results of Factor Analysis for Satisfaction of Development Strategies

Factor	Name	No. of var.	Eigenvalue	Explained variance	Cumulative explained variance	Cronbach's α
1	Business development	4	3.97	49.60	49.60	.79
2	Primary sector development	3	1.14	14.26	63.86	.80

Table 6. Rotated Component Matrix for Stratification of Development Strategies

Variable	Common Factor	
	1 (business development)	2 (primary sector development)
Small business development	.77	.26
Retaining business development	.77	.28
Tourism development	.73	.08
Industrial recruitment	.71	.31
Enhancing agricultural business	.19	.92
Expanding agricultural production	.17	.91
Expanding resource extraction	.30	.64
Recruiting box stores	.44	.42

Notes: factor loading (only $\geq .60$ will be extracted).

In this study, I examined associations between the satisfaction of rural respondents with these economic dimensions in the local community and their attitudes toward community development with an economic focus. My argument is that rural residents' dissatisfaction with local economic conditions increases their support for economic related development. In order to measure respondents' degree of satisfaction with local economic conditions of the local community, according to the economic development approach, three aggregated variables emerged for the analysis after

conducting factor analysis. These variables include “economic satisfaction,” “business development,” and “primary sector development” in order to operationalize the concepts of “quality jobs,” “new economic institutions” and “investment in local resources,” respectively.

The aggregated variable of “economic satisfaction” was created using factor analysis by asking respondent, “How satisfied or dissatisfied you are with each of the following items: (1) your current income level, (2) job opportunities for you, (3) your job satisfaction, (4) your job security, and (5) your financial security during retirement.” (The factor loadings for these questions are over .70) The aggregated variable of “business development” was created using factor analysis by asking respondents, “When you think of your community, how would you rate the following development strategies? (1) small business development, (2) retaining and expanding existing business, (3) tourism development, and (4) industrial recruitment.” (The factor loadings for these questions are over .70). The aggregated variable of “primary sector development” was created using factor analysis by asking respondents, “When you think of your community, how would you rate the following development strategies? (1) enhancing agricultural business, (2) expanding agricultural production, and (3) expanding resource extraction,” (the factor loadings for these questions are over .60). All the questions listed above were answered in a five Likert-type scale ranging from 1 “strongly dissatisfied” to 5 “strongly satisfied.”

Lastly, a variable representing the respondents’ degree of involvement with local government was created. Since Daley and Kettner (1986) argued that development consists of episodes of purposeful change in which the collaboration of participants, nested in multilevel bureaucratic organizations, is necessary, in order to cope with

deliberately identified problems, this variable would be able to examine the association between the respondents' involvement with local governments and the attitudes toward local development alternatives. By asking the respondent, "How involved are you in local government (elected official, volunteer fire dept., member of committee or board, etc.), that is, those that hold meetings and activities in your community?" with a Likert-type scale ranging from 1 "never" to 5 "weekly or more", we can observe the degree of the respondents' involvement in local government within four study communities.

These three aggregated variables represented local economic situations, and were used to examine the relationship between respondents' satisfaction with local economic conditions and their attitudes toward community development as stated in hypothesis 1.

Environmental development-related variables. As mentioned in Chapter II, Corral-Verdugo and Armendáriz (2000) found that pro-ecological beliefs measured by the NEP scale were significantly related to pro-environmental behavior and directed to preserving the environment. My second hypothesis in this study is that rural residents' environmental friendly attitudes and behaviors influence them to support environmental development alternatives with an environmental focus. In order to measure respondents' environmental attitudes and behaviors, I measure their environmental attitudes through the NEP scale and several environmental behaviors.

Before using the NEP scale to measure local residents' environmental attitudes, it is necessary to discuss the advantages and disadvantages of the NEP scale. Since the scale had been widely applied, the issue of its consistency and stability is crucial. For example, Geller and Lasley (1985) examined the consistency and stability of the original NEP scale using confirmatory factor analysis, which determines if the number of factors

and the loadings of measured indicators conform to expectations of pre-established theory. They assumed that, if the NEP scale was consistent in factor structure, surveys of different groups would result in the same number of factors. However, their results confirmed the three sub-scales found by Albrecht et al. (1982) only after removing three items from the original NEP scale. Furthermore, different survey groups resulted in different numbers of factors on the NEP scale. These results contradict both the conclusion of Dunlap and Van Liere (1978) that the NEP scale has a unitary dimension, and of Albrecht et al. that there are three vectors in the NEP scale. In addition, Arcury, Johnson, and Scollay (1986) surveyed the environmental attitudes of the general public in Kentucky, using five out of twelve components of the original NEP scale. Their results showed two sub-scales with Cronbach's α values of .69 and .63. Arcury and Christianson (1990) surveyed the same area using the same five components and got a Cronbach's α value of .62. They found that the general public in Kentucky had increased their environmental concerns between 1984 and 1988. Their results also supported the hypotheses that younger people and people with more education would be more concerned about environmental protection.

Others, like Pierce et al. (1987), used six of the twelve components of the original NEP scale to test the relationship between Post-Materialism and the New Ecological Paradigm by comparing the degree of environmental consciousness among the general public, environmental movement participants, and social-political elites in the United States and Japan. Two of the components were revised to be presented in negative wording and one component was rewritten, to determine if the six components had internal reliability. Cronbach's α was approximately .70 for all six sample groups. Results

for both countries showed that the general public was less environmentally concerned than environmental movement participants or social-political elites. The general public in Japan was slightly more positive than its counterparts in the United States in terms of ecological worldview, even though Shizuoka, the research area in Japan, was more commercialized than Spokane, Washington, the research area in the United States. The Japanese, in general, displayed greater environmental concern than the Americans. The authors concluded that a society's ecological worldview cannot be judged solely by its level of economic development (industrialization to post-industrialization or post-materialism) and that the traditional Japanese culture of "harmony between nature and human beings" may be a key factor in their ecological worldview.

In contrast to studies comparing different countries, Caron (1989) focused on the ecological worldview of black Americans in comparison to surveys of white Americans. She revised the original Likert-type NEP scale into a three-category scale, with a resulting internal reliability of Cronbach's $\alpha = .53$. Caron (1989) concluded that the NEP average score of a group of black individuals from urban Virginia was around the average scores of the general public, indicating that the environmental concern of black Americans was higher than predicted by Dunlap and Van Liere (1978) and other theoretical studies. Caron concluded that prior studies focused on concrete environmental problems (e.g., air and water pollution, and noise), specifically the poor environmental quality resulting from the adverse social position of blacks (poor living conditions, racial discrimination, and poverty). As a result, black people were seen as less concerned about their immediate environmental problems and improvement. However, the NEP scale measured an abstract environmental worldview and ideology and in that context black

people appeared to have the same environment-oriented attitude as white people. Caron (1989) suggested that, therefore, researchers should take both concrete and abstract environmental problems and attitudes into consideration when examining the environmental worldview of any particular group.

Edgell and Nowell (1989) also surveyed 190 fishers, 64 environmentalists, and 306 members of the general public in British Columbia, Canada, to compare their beliefs about wildlife and the environment using the original NEP scale. The results showed that the Cronbach's α in each group was higher than .80, but only in the fisher group was a unitary dimension of the NEP scale detected through factor analysis. In the other two groups, three sub-dimensions of ecological worldview were found, with the same result as those of Albrecht et al. (1982) and Geller and Lasley (1985). From the result of the predictive validity test, they found the intensity of support for the NEP scale decreased from the environmentalists to the general public to the fishers. This trend confirmed the environmental sociologists' prediction.

In addition, Noe and Snow (1990) executed a two-stage mail survey in Florida National Park. In the first stage, they asked the visitors and sports boat owners in the national park about their environmental concerns using the NEP scale and in the second stage they surveyed the residents near by the national park about the same questions. The questionnaire had two versions, one written in English and the other in Spanish. The results showed that the NEP scale consisted of two sub-dimensions for these two groups and the reliability of these sub-scales was not consistent. Comparing different ethnic groups' environmental attitudes, the authors found the Hispanic (Spanish-speaking) group more supported the concepts of the NEP than the non-Hispanic group did. From

this result, Noe and Snow (1990) concluded that the reverence for nature in their religious beliefs, the expectations of high SES and achievement in Latin culture and the interaction with the Americans play an important part in explaining why the Hispanic group had higher support for the NEP than the non-Hispanic group.

A review here of prior studies using the NEP scale highlighted several problems. First, the internal reliability of the scale was influenced by random error. According to Nunnally and Bernstein (1994), studies applying the scale to a broad range of individuals should have a Cronbach's α of .80 or higher, because researchers reduce the impact of random error by correcting the scale, which reduces internal reliability. If Cronbach's α is over .80, internal reliability would be robust after correction for random error. Of the NEP scale studies described above, only Dunlap and Van Liere (1978) achieved the minimum Cronbach's α of .80. Why, then, did the other researchers use the NEP scale with a lower internal reliability? Is it valid to measure the ecological worldview of a society using the NEP scale with a lower Cronbach's α ? In fact, a satisfactory value of Cronbach's α depends on the background and context of the particular study. Sources of random error include time, location, respondents, and other factors. If these factors are taken into consideration, variation among different social groups in the Cronbach's α , and in the internal reliability of the NEP scale, can be understood. Nevertheless, the internal reliability of the NEP scale should be similar for homogeneous groups in different areas, such as for environmental movement participants in the US and Europe.

Besides the random errors, the issue of non-random measurement errors (validity of scale) cannot be ignored. From prior studies, we can observe that after testing its content, predicative, and construct validity, the degree of the scale's validity could be

acceptable if it showed that the respondents' ecological worldviews match the theoretical perspective among different social groups. Age, education, and political ideology were significantly predictive variables linked with ecological worldview, but occupation (Albrecht et al. 1982; Edgell and Nowell 1989), ethnicity (Caron 1989; Noe and Snow 1990), culture (Pierce et al. 1987; Noe and Snow 1990), and membership in environmental organizations (Dunlap and Van Liere 1978; Edgell and Nowell 1989) needed further statistical tests to confirm the validity of the NEP scale.

Second, results of factor analysis from prior studies indicated that the original NEP scale was composed of more than one concept. Some researchers have divided the NEP scale into two or three sub-scales, corresponding to different theoretical perspectives, such as balance of nature, limits to growth, and humans over nature. Such division was counter to Dunlap and Van Liere's (1978) assumption of the unitary dimension of the new ecological paradigm. Furthermore, the results of the empirical studies discussed above did not support the assumption that the reliability and validity of the NEP scale should be highly robust, regardless of whether the surveyed groups were culturally similar or different. Responding to these two problems, Dunlap et al. (2000) developed a revised NEP scale, based on the recognition that the original scale included too wide a range of facets of ecological worldview, an unbalanced set of pro- and anti-NEP components, and outmoded terminology. Despite their attempts to improve the scale, Dunlap et al. (2000:431) concluded that "the decision to treat the NEP as a single variable or as multiple variables should not be made beforehand but ought to be based on the results of the particular study". If two or more distinct dimensions of the NEP scale results have validity problems or are not highly correlated with one another, it is

reasonable to see them as different variables. If the NEP scale results are internally consistent, they should be viewed as a single variable.

When using the NEP scale to measure the respondents' environmental worldview, some had applied it without modification; others had either revised specific components, or selected a part of the scale for their own research interests and purposes. For example, Albrecht et al. (1982) used the original NEP scale to survey 348 ruralists and 407 urbanites in Iowa and found that the reliability declined significantly in the rural group, compared to the urban group. With respect to predictive validity, the results supported the hypothesis that rural residents are less concerned about environmental protection than people in urban areas. Therefore, they concluded that the NEP scale adequately assessed people's ecological worldview. In response to the NEP-oriented approach, some community researchers had focused on finding a solution to the problem of meeting the material needs of the population while not detracting from environmental sustainability (Yanarella and Levine 1992; Cuba and Hummon 1993; McCright and Clark 2006). To do this, the concept of sustainable community development was seen as an alternative to reach these goals (Bridger and Luloff 1999, 2001).

Based upon the discussion above, the NEP scale adopted in this study had been revised through the examinations in prior empirical studies in order to get a reliable scale (Dunlap et al. 2000; Lundmark 2007). That is, the NEP scale adopted here was a five-item scale to accurately measure the local residents' environmental attitude. These items include: (1) "The so-called 'ecological crisis' facing humankind has been greatly exaggerated," (2) "If things continue on their present course, we will soon experience a major ecological catastrophe," (3) "The balance of nature is strong enough to cope with

the impacts of modern industrial nations,” (4) “The earth is like a spaceship with only limited room and resources,” and (5) “Humans are severely abusing the environment.” In order to provide an overall picture of the level of NEP support for respondents, a summary index was constructed. That index represented the sum of individual scores across the five items for all individuals who responded to all five of the NEP questions.

In addition, two variables of “environmental satisfaction” were created using factor analysis by asking respondents how satisfied or dissatisfied they were with community life with respect to “clean air and water” and “greenery.” These two questions were answered in a five Likert-type scale ranging from 1, an indication of strong dissatisfaction to 5, indicating a strong satisfaction. Also, an aggregate measurement of their environmental behaviors, environmental involvement, was created by asking, “In the past 12 months, have you participated in any environmental activities including: time or money contributed to an environmental or conservation group, attended a public hearing or meeting about the environment, contacted a government agency to get information or complain about an environmental problem, voted for or against a political candidate in part because of his or her position on the environment, read a conservation or environmental magazine, and time spent watching a television special on the environment. Note that these questions were asked in “Yes/No” format. Interval variables developed range from 0 to 6 from these questions by adding the respondents’ answers—higher scores mean the respondent had more actual behaviors connected closely to the natural environmental.

Two additional variables of environmental friendly behaviors were created. First variable refers to “green features in house,” asking the respondent, whether their home, or

any portion of their home, was built with recycled materials, wood sustainably harvested, or other green design features. The other variable used to measure the respondents' recycling habits was, "What proportion of the following wastes do you recycle? (1) aluminum, (2) electronics, (3) glass, (4) paper, (5) plastic." With a Likert-type scale from 0 to 3, (0 "none," 1 "a fair amount," and 3 "almost all"), an aggregated variable of recycling behavior was developed, ranging from 0, "not at all," to 15, "fully recycle." These two variables measure the extent to which each respondent displayed environmental friendly behaviors in the daily life.

Therefore, by using these variables of environmental attitudes and behaviors, I provided a framework with which to examine the extent to which rural people's environmental friendly attitudes and behaviors influence them to focus on environmental development alternatives, as described in Hypothesis 2.

Social development-related variables. When developing the predictor variables of the social development conceptual framework, I considered the work of Sharp (2001), who found that social relationships and local residents' interaction structure were significantly associated with the community capacity for local action. Therefore, the third hypothesis in this study is that rural residents' close social relationships within the local community influence them to view community empowerment as the primary concern when the local community faces rapid social change.

According to prior studies, community attachment is a multidimensional concept and there is not any consistently operational measurement for it (e.g., Kasarda and Janowitz 1974; St. John, Austin, and Baba 1986; Sampson 1988; Goudy 1990; Stinner et al. 1990; Beggs et al. 1996; Theodori and Luloff 2000; Brehm et al. 2004). To summarize

the measures of community attachment in these studies, I focused here on three dimensions: network ties, sentiment, and community involvement. One study asks, “The degree to which ties to friends and kin are concentrated in the local community and the extensiveness of ties in the local community” (Beggs et al. 1996:408). Sampson asks about social bonds, the proportions of friends and relatives living in the respondent’s community, the proportion of local people known, and the number of organizational memberships, for example. Sampson (1988) measured the percentage of community residents who reported half or more of their friends living within a 15-minute walk of home as one dimension of community attachment. Brehm et al. (2004) determined a way to measure how important having “friends close by” or “family ties” was to the respondents’ attachment to the community. The dimension of community attachment is intended to measure the degree of closeness and acquaintance in terms of social relationships among local residents, a crucial factor that determines collaboration in community action (Wilkinson 1986).

“Sentiment” addresses the sense of belonging to a local community. Some studies have adopted sentiment as a mono-dimension to measure community attachment (Kasarda and Janowitz 1974; St. John, Austin, and Baba 1986; Theodori and Luloff 2000). The study questions that measure sentiment in community attachment studies are a sense of feeling “at home,” interest in knowing what goes on in home area, and the sorrow of leaving the home area. By measuring these sentiments to the local community, I was able to capture local residents’ feelings towards their home and see how these feelings reflect a traditional sense of community in the discussion of Tönnies’ (1963) concept of *Gemeinschaft*.

The third dimension measures community involvement. In most studies, involvement was measured as respondents' involvement in community activities and organizations. For example, Sampson (1988) measured the degree of social involvement using visiting friends and relatives, leisure entertainment (such as going to pubs, restaurants, or movies), attendance and/or participation in sporting events, and organizational participation (e.g., committee meetings or clubs). The last dimension discussed here was about the relationship with the natural environment. In the study by Brehm et al. (2004), they considered the natural environment as another important dimension of community attachment ignored in most studies. As a result, they asked questions related to the natural environment, such as the importance of wildlife and of natural landscapes and views, in order to get a whole picture of attachment to the community. In short, the concept of community attachment reflected the relationship between people and locality, but oftentimes was considering the social dimension of relationship within a given territory.

Some scholars have suggested that individuals' feelings and attachment to the local community can be measured using the degree of community satisfaction (Stinner et al. 1990) and/or social interactions (O'Brien and Hassinger 1992). In my study, a general question was used to measure respondents' overall attitude toward local community development by asking: Communities across the nation are undergoing change. When you think about this past year, would you say, "My community has (1) changed for the better, (2) stayed the same, and (3) gotten worse." Respondents were also asked to describe their overall feelings toward their neighbors. I measured the respondents' social distance from his or her neighbors, NB distance, from 1 (very distant) to 5 (very close).

Then, an aggregated variable of “social satisfaction” was created using factor analysis by asking respondents how satisfied or dissatisfied they are with community life in terms of family relationships, friendship, married life, and religion/spirituality (see Tables 3, 4, and Figure 1 for factor loading result). These questions were answered in a Likert-type scale from 1 to 5.

In addition, respondents were asked, “How many organizations do you donate money or necessary items to?” I measured the degree of support for the local organizations (this variable was named as support local organizations). In order to measure the strength of respondents’ community support, one question was designed to ask, “If tomorrow a major disaster occurs, whom do you think should work together to cope with the situation?” The structural options with a five Likert-type scale ranging from 0, “strongly disagree,” to 5, “strongly agree,” were households working by themselves, neighbors working with one another, local church/ward working together, local government/municipal political leaders, state government, and federal government. I specifically focused on responses for questions 2, 3, and 4 to create an aggregated variable of community support ranging from 0, “strongly disagree,” to 15, “strongly agree,” to measure the extent to which respondents’ perceive high potential for community support from neighbors, local organizations, and local governments. This variable was named community support.

The variables of community change, NB distance, social satisfaction, community support, and support of local organizations were used to examine the community interaction argument in Hypothesis 3.

Sociodemographic variables. The final category of independent variable is the sociodemographic one. Traditionally, sociologists measured the social position component of social structure by focusing on achieved statuses (e.g., education, income) and ascribed statuses (e.g., race and gender). By looking at these basic social structures, social researchers are able to understand how individual attitudes or values are formed, influenced, or changed by invisible structural configuration. In this study, I also added these variables into my research model.

Age was used as an interval variable in this study. I analyzed the affect of age on preferences in community development alternatives. Using research conducted by Beggs et al. (1996) arguing that age alone cannot fully reflect the marital and parenting stage in the life cycle, which might influence community attachment, I consider the marital and parenting stage of the cycle based on Knoke and Thomson's (1977) study on the relationship between life cycle stage and organizational participation. A variable was created to capture this idea of life cycle stage: respondents were categorized as young single and married individuals without children, young married individuals with children, older singles, or older married individuals by asking their age, marital status, the number of people who lived in their home and the number of children they had. Education was included in the analyses as one variable of social-economic background created using an ordinal variable for each of the categories including "less than 9th grade," "9th to 12th grade (no diploma)," "high school diploma (or equivalency)," "some college, no degree," "associate degree," "bachelor's degree," and "graduate or professional degree."

The final sociodemographic variable weighed in this study is length of residence in the community. Prior studies have indicated that length of residence is directly related

to community attachment (Kasarda and Janowitz 1974; Krannich, Greider, and Little 1985; Freudenburg 1986; Goudy 1990; Beggs et al. 1996; Theodori and Luloff 2000; Liu and Besser 2003; Brehm et al. 2004; Flint and Luloff 2007). Data collected in this study included the number of years respondents had lived in the community as an interval variable to examine the effect of length of residence on community development preference and the extent of that effect.

ANALYSIS PROCEDURE

In response to the purpose of this study, three approaches to community development and one research hypothesis corresponding to each one were tested using macro-level social and economic census data and individual-level variables; the importance of including multiple levels of analysis in the data set are complicated by a number of concerns. Using descriptive statistics from U.S. census data of macro-economic structural change in the four study areas, I was able to identify a background to better understand how rural communities cope with external economic structure changes by presenting macro statistics from published government reports identifying the macro social and economic forces and the economic pattern changes facing the communities. The major data sources are primarily from the U.S. Census Bureau (U.S. Census 1950-2000) and include population change, industry statistics, and poverty rate and median household income.

Data analyses were conducted separately for each community and for all dependent variables with adequate data, using STATA/SE 10. In order to examine the relationship between individuals' attitudes toward community development, community

context and individuals' sociodemographic characteristics, logistic regression modeling was applied. The algebraic equation of logistic regression modeling is discussed below. Here, binary dependent variables are used. In the logistic regression model, we are estimating a binary logistic for each pair of outcome categories.

In this study all three outcome variables are binary variables and either mention or not mention economic, environmental and social development alternatives. The odds of mentioning any one of development alternatives are determined by the predictor variables, expressed as $E(Y|x)$, meaning that the expected value of Y is given by the value x . The probability distribution of Y can be expressed as follows:

$$P(Y = 1) = \frac{e^{\beta'x}}{1 + e^{\beta'x}} = \frac{1}{1 + e^{-\beta'x}}$$

$$P(Y = 0) = 1 - P(Y = 1) = \frac{1}{1 + e^{\beta'x}}, \text{ when}$$

$$\beta'x = (\beta_0 + \beta_1x_1 + \beta_2x_2 + \cdots + \beta_ix_i)$$

where Y denotes the dependent variable and x values denote the independent variables (Lewis-Beck, Bryman, and Liao 2004). Then this model was used to examine the affect of the predictor variable x on attitudes toward community development preference. β values indicate the coefficient for the odds of mentioning or not mentioning either economic, environmental, or social development alternatives.

In addition, for interpreting the logistic regression, several indices should be considered. The first index is the log likelihood, which is mainly used in a nominal test for the model's goodness of fit by looking at the likelihood-ratio *chi-square* and degree of freedom. Another goodness-of-fit statistic is the maximum likelihood, another popular pseudo- R^2 , denoted R_{ML}^2 . R_{ML}^2 , would reproduce R^2 if applied to a linear regression model,

but it also can be applied more generally to all models to which maximum likelihood estimation is applied, such as the logistic regression applied here. To examine the model M_k , where k is the number of explanatory variables, there is an associated statistic equation L_{M_k} , which is the likelihood of observing the sample data based upon the parameters of model M_k and another statistic L_{M_0} , which is the likelihood of observing the sample data from the null model with no any explanatory variables, M_0 . Therefore, R_{ML}^2 (maximum likelihood R^2) is produced by using the ratio of these two likelihoods, $R_{ML}^2 = 1 - (\frac{L_{M_0}}{L_{M_k}})^{\frac{2}{N}}$, or $1 - \exp(-\frac{G^2}{N})$, with G -test and N total number of observations (Lewis-Beck et al. 2004).

Based on the type of the outcome variables and the purpose of this study, logistic regression methods were primarily used in this analysis. A subset of independent variables was chosen to use in the logistic regression model building procedures. For each of these independent variables, they selected only the lag condition with the smallest p -value and significant ($\alpha < .05$) simple regression coefficients.

SUMMARY

This chapter describes the study areas and identifies data collection methods, measurement, and analysis procedures. For study areas, the brief history and description of socioeconomic characteristics in Kanab, Moab, Price, and Richfield, Utah provide the background to understand how the external environment shapes rural residents' ways of thinking their community and its development. The explanation of data collection illustrates the logic of building a reliable database used to explore the reality of rural

communities. Measurement and analysis procedures are important parts of exploring my research hypotheses. Clear connections between theoretical arguments and research design, valid conceptualization and operation of concepts and ideas were made and examined here. Last, the use of proper analysis tools to examine research hypotheses is crucial. Due to the type of research variables and the purpose of this study, logistic regression modeling was selected. In the next chapter, I will present the results from the research models and provide explanations for the research findings.

CHAPTER IV

RESULTS AND ANALYSIS

This chapter presents the results of three parts of analyses in this study. Since I focus on the similarities and differences within and between communities in individuals' attitudes toward community development alternatives, the analyses were conducted around this topic. This chapter is organized with four analysis sections followed by one summary section demonstrating the relationship between individuals' attitudes toward community circumstances and individuals' attitudes toward community development alternatives. The first section provides the basic historical background in these four study communities by collecting census data about population change, poverty rate, household median income, and industry structure change from 1950 to 2000. Through review of their historical changes we have a better understanding of the research areas.

The second section discusses the demographic and socioeconomic characteristics of the samples from all four study communities as sociodemographic profiles for further analyses. The third section presents survey participants' opinions and attitudes toward general community issues, their participation in community organizations and aspects of their lifestyle from the survey data. The data were used to analyze the relationship between individuals' experiences of living in the community and their attitudes toward community development alternatives. The fourth section presents the results of my research models showing the similarities and differences within and between communities in terms of individuals' attitudes toward development alternatives. These results are presented by comparing data within communities to a general model and

examining the extent to which the predictor variables, based on community development approaches and research hypotheses, help us understand the individuals' attitudes toward community development alternatives.

The summary section includes research findings and provides results by examining the research hypotheses. The basic research hypotheses are from three development frameworks and, by examining specific modeling processes, I can examine whether the respondents' attitudes toward community economic conditions, environmental concerns and social relationship focus influence their local development preferences. This sociological question will be explored and answered as an empirical question to provide insight into rural development policy-making.

HISTORICAL BACKGROUND FROM CENSUS DATA IN STUDY AREAS

By collecting census data from various time periods, I compare data from four communities including population change, poverty rate change, household median income change, and industry structure change. Community profiles and economic structure disadvantages in rural communities in the past decades are part of the cause for rural residents' demands for economic resuscitation. This section is to discuss the changes in the population and economic structure since the early 20th century.

Population Change

The population changes in the four study communities shown in Figure 3 illustrate different trends within each community. Both Kanab and Richfield had relatively stable population growth, compared to Moab and Price. Kanab's population

rose from 710 in 1900 to an estimated 4,111 in 2010 with an average 18% growth rate. Noticeably, between 1970 and 1990 Kanab's population dramatically increased 138% from 1,381 to 3,289, corresponded to manufacturing and service industries extension (Figure 4). In contrast, two periods of negative population growth appeared in 1940-1950 and 1960-1970 with 8% and 16% rate of decrease, respectively. The overall population change in Kanab since 1900 slowly increased and will be over 4,000 by 2010, according to census data estimation (USBC 2010).

Following a similar pattern of Kanab population change, the Richfield population went from 1,969 to an estimated 7,553 with an average 13% annual growth rate. Also, the highest growth rate was still less than 30% and appeared in 1970-1980. The second peak population growth happened in 1990-2000 with 22% rate from 5,593 to 6,847. From this information on average growth rate and standard deviation, we can see that the population change in Richfield was relatively slow and stable. In addition, according to the census data, the only negative population growth in Richfield appeared in 1930-1940 from 3,967 to 3,584. Other than that, the population has stably increased during census period. Later I will examine their economic structures and examine how the economic structures correspond to population changes in these two rural communities.

Figure 3 shows population changes in the four study communities. Before 1970, the Kanab population was stable and increased slowly; after 1970 it presented a steeper increasing trend. In Richfield, the population stably increased, although there were certain periods showing nearly zero growth patterns.

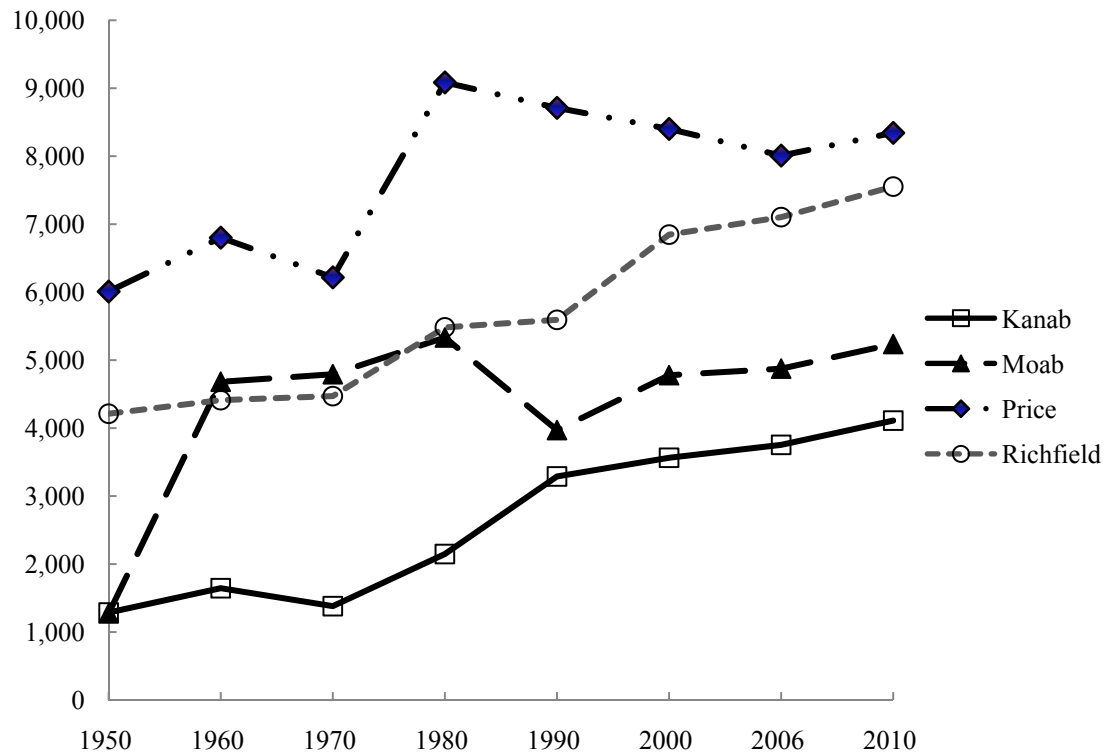


Figure 3. Population Change in Four Study Communities, Utah

Sources: U.S. Census Bureau and Utah Population Estimates Committee

Notes: the estimated populations in 2006 and 2010 are based on 2000 census data.

After rapid and dramatic population growth in 1950-1960, the Moab population stabilized, although it faced a steep population decrease during the period from 1980-1990. Price also experienced a boom-to-bust cycle, but it had been facing the problem of population decrease between 1980 and 2006, compared to its rural counterparts.

Industry Structure Change

Information about industry structure changes were collected from U.S. census data throughout time periods from 1950 to 2000. It is important to note that 1950 census data was chosen as a starting point for this research primarily to examine changes in

industry sectors in rural areas following World War II. These changes in industry structures in rural areas responded to nationwide, rapid economic development, urbanization, and globalization.

These four study communities had different patterns of change in their industry structure as well as populations. In Kanab, the primary agriculture sector led the economic activities until the 1960s and then the secondary sector replaced the primary in order to maintain local economic development until the 1980s. After the 1980s, Kanab focused on the development of economic activities in the tertiary sector. Their economic structure shift was clear and followed the steps of outside economic development. For this reason, I propose that Kanab had the features of flexibility and the ability to adapt when facing external and internal structural changes.

After a boom-to-bust cycle, Moab faced tough economic disadvantages following the 1980s. My observation for its economic disadvantages is that Moab lacked the development of industry infrastructure and economic diversity (Figure 4). Therefore, once after the Moab uranium mining burst in the 1960s, it lacked the social and economic resources to maintain local quality of life.

In contrast, although Price also had a mining boom-to-bust cycle in its history, it also had diverse economic activities enough to maintain its economic development. In addition, its geographic location near the development of the railroad provided economic advantages that allowed Price to be the center of social, political, economic, and cultural activities for the areas nearby. In Richfield, the pattern of industry structure is to shift from the primary sector to the tertiary, with a small piece of the manufacturing sector developing.

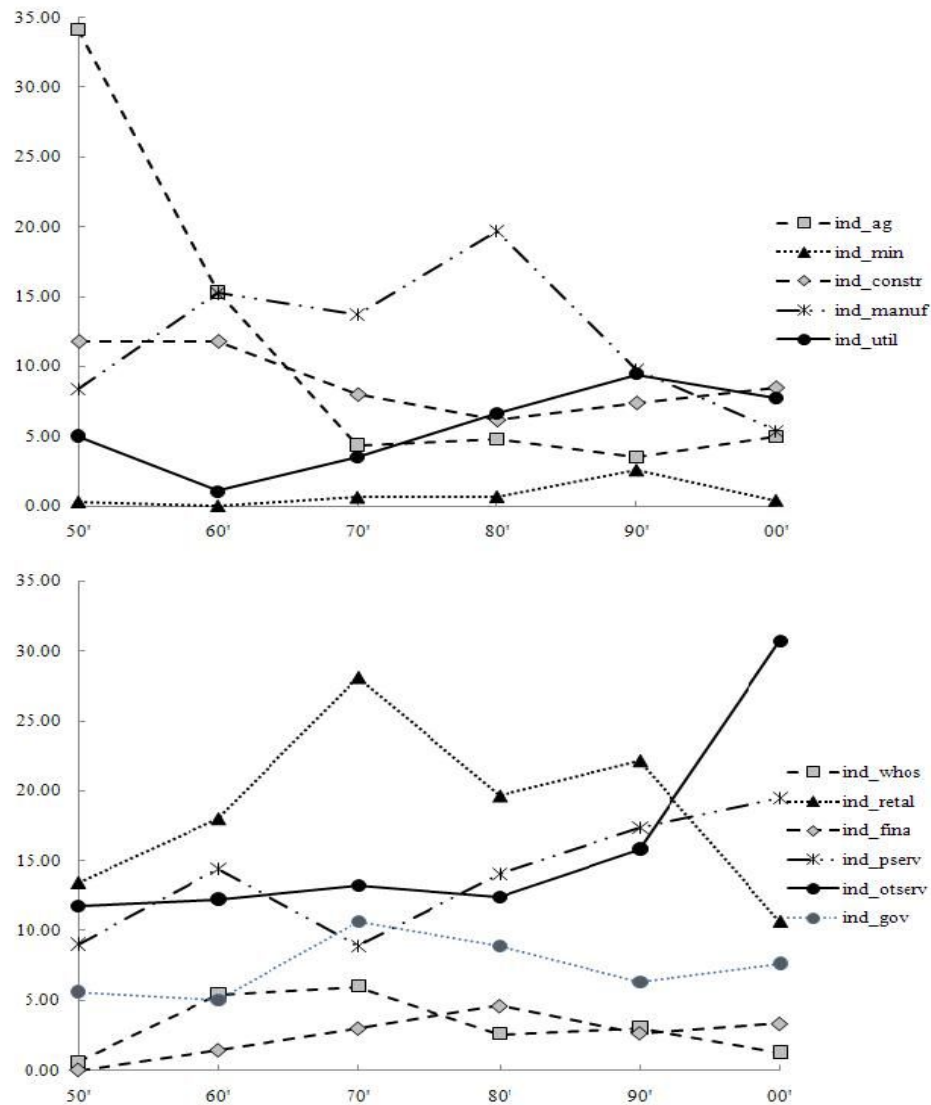


Figure 4. Employment Percentage Change in Industry Sectors: Kanab

Sources: U.S. Census Bureau from various census years

Notes: ind_ag: Agriculture; ind_min: Mining; ind_constr: Construction; ind_manuf: Manufacturing; ind_util: Transportation, communications, and other public utilities; ind_whos: Wholesale trade; ind_retail: Retail trade; ind_fina: Finance, insurance, and real estate; ind_pserv: Professional and related services; ind_otserv: Other services; ind_gov: Public administration.

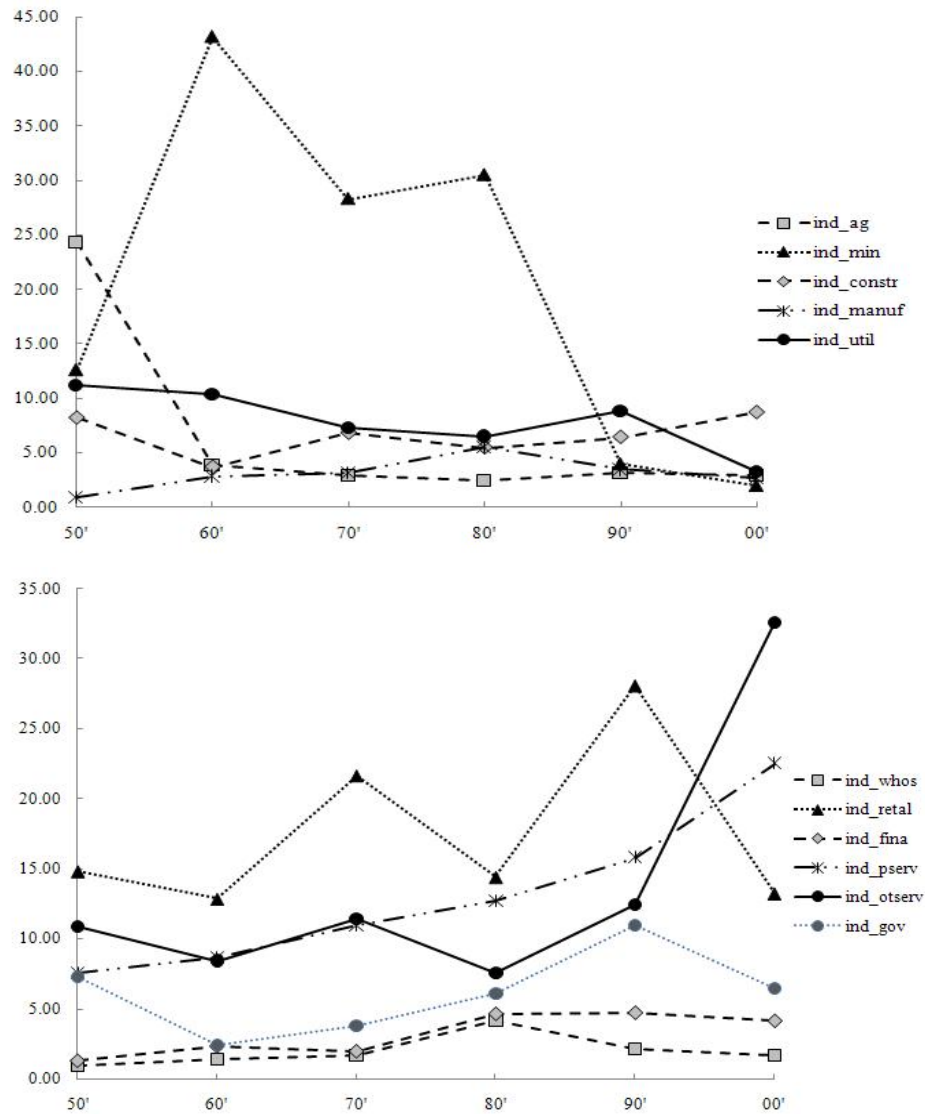


Figure 5. Employment Percentage Change in Industry Sectors: Moab

Sources: U.S. Census Bureau from various census years

Notes: ind_ag: Agriculture; ind_min: Mining; ind_constr: Construction; ind_manuf: Manufacturing; ind_util: Transportation, communications, and other public utilities; ind_whos: Wholesale trade; ind_retail: Retail trade; ind_fina: Finance, insurance, and real estate; ind_pserv: Professional and related services; ind_otserv: Other services; ind_gov: Public administration.

Since Richfield had the highest percentage of employed population in professional and related services and diverse economic activities, one can see that it's local economic development was relatively stable, compared to that of Kanab or Moab, and similar in economic construction to Price.

These different characteristics in four study communities and the patterns of population change in the prior section provide us a clearer background to understand the extent to which the economic structure influences local residents' requirements for community development. In the next section, I focus on additional information about the change in the poverty rate in the four communities and attempt to understand the relationship between population change, economic structure change, and poverty.

Poverty Rate Change and Median Household Income Change

Another index with which to measure macroeconomic change is the change in the poverty rate. Figure 8 shows the change in poverty rate in the four study communities from 1989 to 2007. Generally speaking, Figure 8 indicates that the four study communities had similar patterns of poverty rate change throughout the data years.

Based on the information the change in the poverty rate, these four communities' economic stability were compared by looking at changes in household median income in order to provide clearer pictures of the macroeconomic pattern changes experienced by these rural communities. For a better comparison, I recalculated the median household income in different data years taking inflation into account, with the help of the consumer price index provided by the U.S. Census Bureau of Labor Statistics (USBLS 2009).

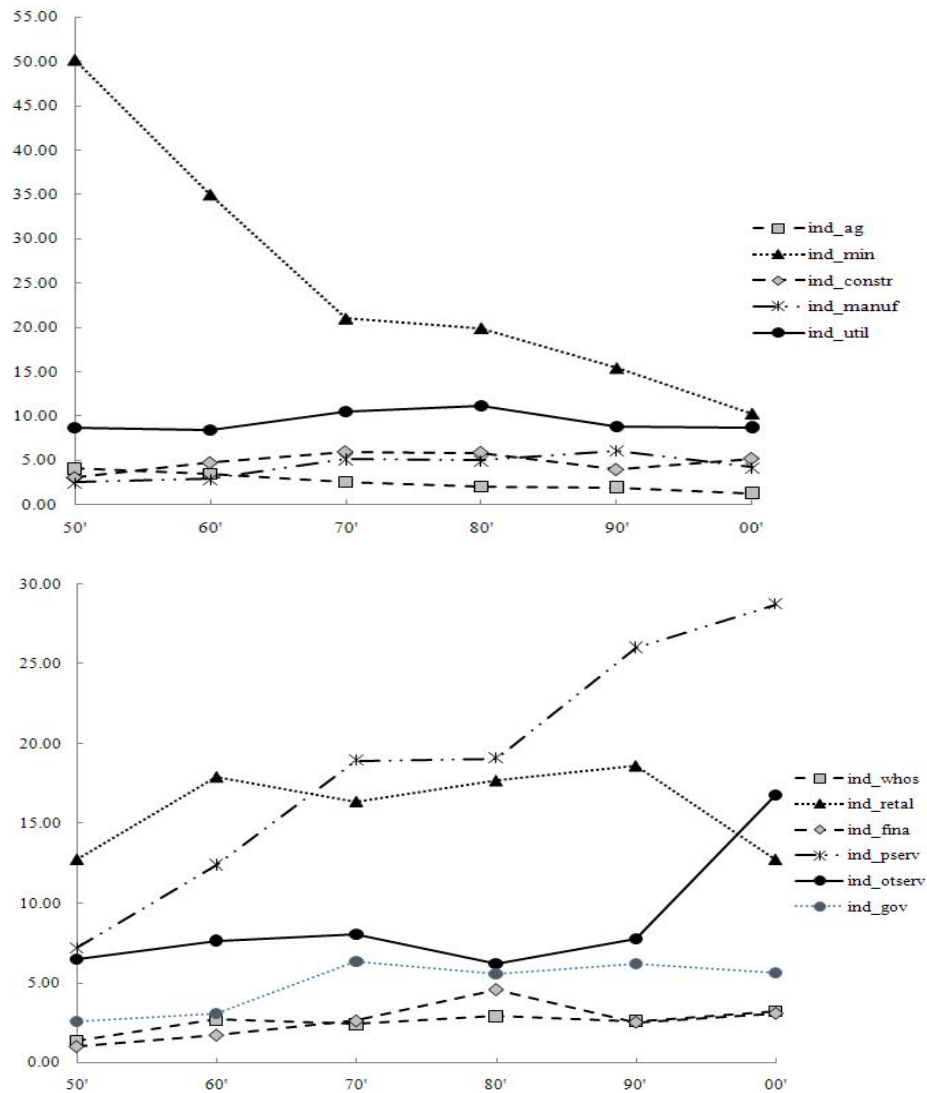


Figure 6. Employment Percentage Change in Industry Sectors: Price

Sources: U.S. Census Bureau from various census years

Notes: ind_ag: Agriculture; ind_min: Mining; ind_constr: Construction; ind_manuf: Manufacturing; ind_util: Transportation, communications, and other public utilities; ind_whos: Wholesale trade; ind_retail: Retail trade; ind_fina: Finance, insurance, and real estate; ind_pserv: Professional and related services; ind_otserv: Other services; ind_gov: Public administration.

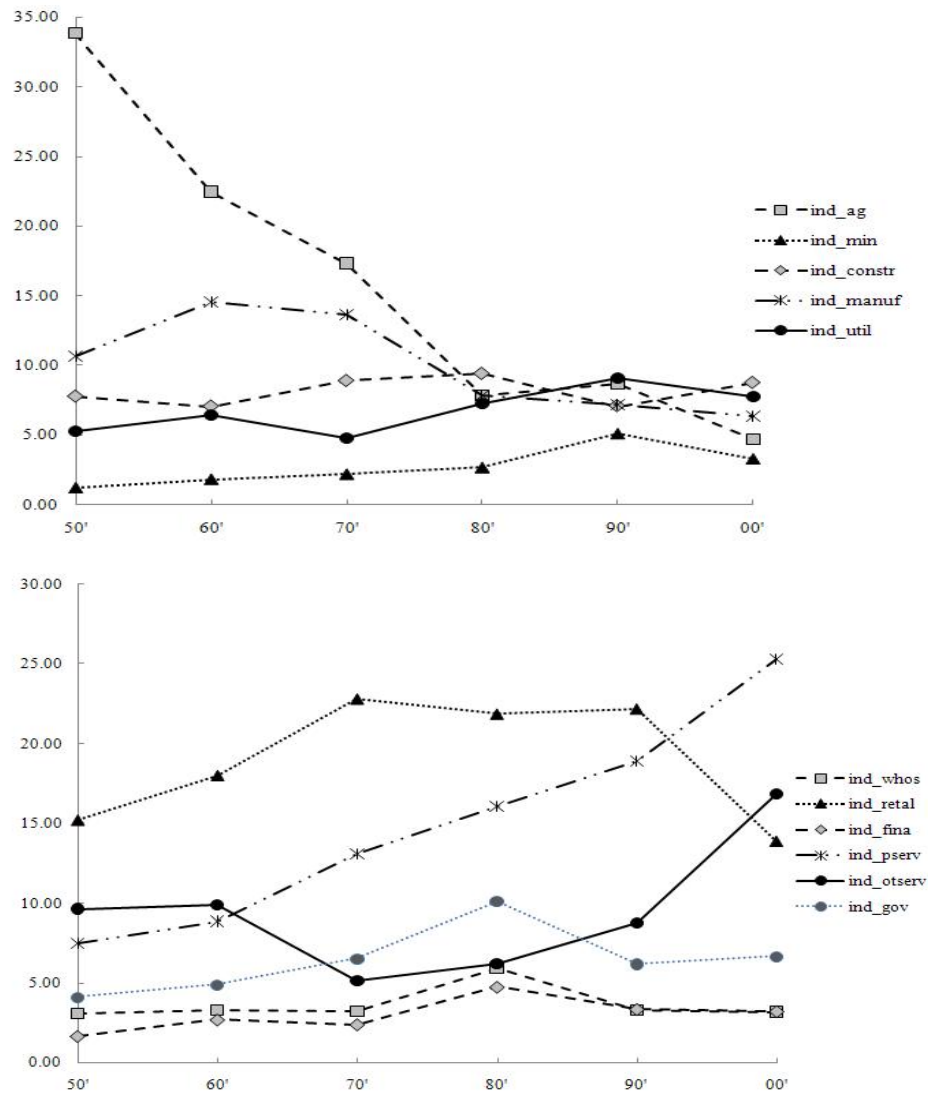


Figure 7. Employment Percentage Change in Industry Sectors: Richfield

Sources: U.S. Census Bureau from various census years

Notes: ind_ag: Agriculture; ind_min: Mining; ind_constr: Construction; ind_manuf: Manufacturing; ind_util: Transportation, communications, and other public utilities; ind_whos: Wholesale trade; ind_retail: Retail trade; ind_fina: Finance, insurance, and real estate; ind_pserv: Professional and related services; ind_otserv: Other services; ind_gov: Public administration.

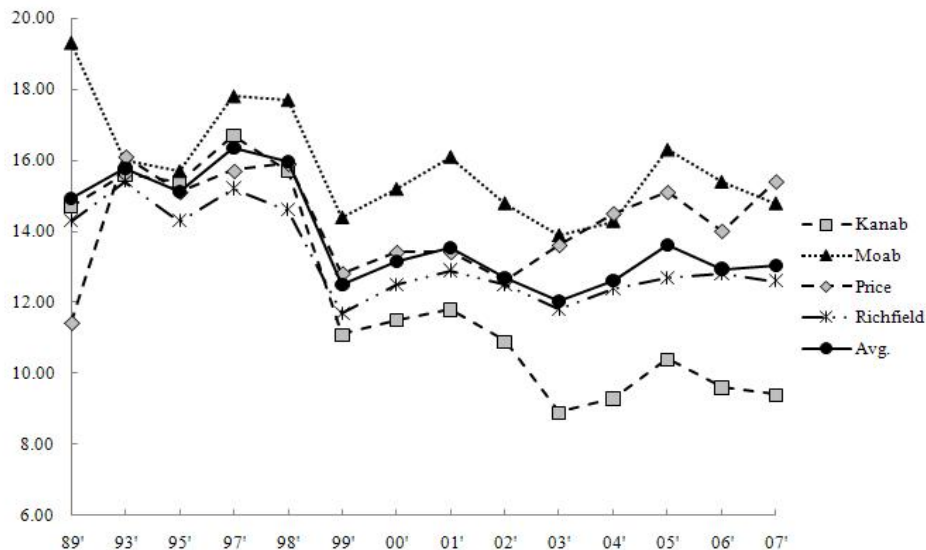


Figure 8. Poverty Rate Change in Four Study Communities

Sources: U.S. Census Bureau. Retrieved June 29, 2009

(<http://www.census.gov/hhes/www/poverty/poverty.html>).

Notes: the Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty.

The median household income, based on the distribution of the total number of households, including those with no income, was computed, based on a standard distribution. Therefore, Figure 9 displays the patterns of change in the median household income in the four study communities were consistent, except for Moab's reversed case in 1989-1993. The three other communities experienced decreased income levels. Not surprisingly, Moab was a relatively poorer community and had the lowest median household income among the study communities.

Kanab's general performance in terms of median household income had been relatively stable despite falling slightly below the average median household income of the four study communities. Kanab appeared to be a stable economic structure based on

the data on industry structure, poverty rate, and median household income. Likewise, Price, before 2000, had been the richest among the four study communities, but had not taken the leading role after 2000; however, its economic effort was second in the following data period. This evidence shows that Price, due to diverse economic activities, had well maintained economic activities and kept the income level stable, although macroeconomic structure changes influenced resident's household incomes, as they did the others. Richfield, compared to Price, had better economic performance following 2000 and experienced the highest economic growth rate in 2006-2007, much better than its counterparts.

In summary, since rural America is vast and diverse, and different communities face different challenges and opportunities, these graphs showing macroeconomic changes (industry structure change, poverty rate change, and household income change) provide valuable information illuminating real situations in rural communities. To correspond to the development approach of economic resuscitation, discussed in previous chapter, we might be wondering if macro social and economic changes and local economic structural change would necessarily lead local residents to demand economic growth, infrastructure improvement, or other substantial economic development plans.

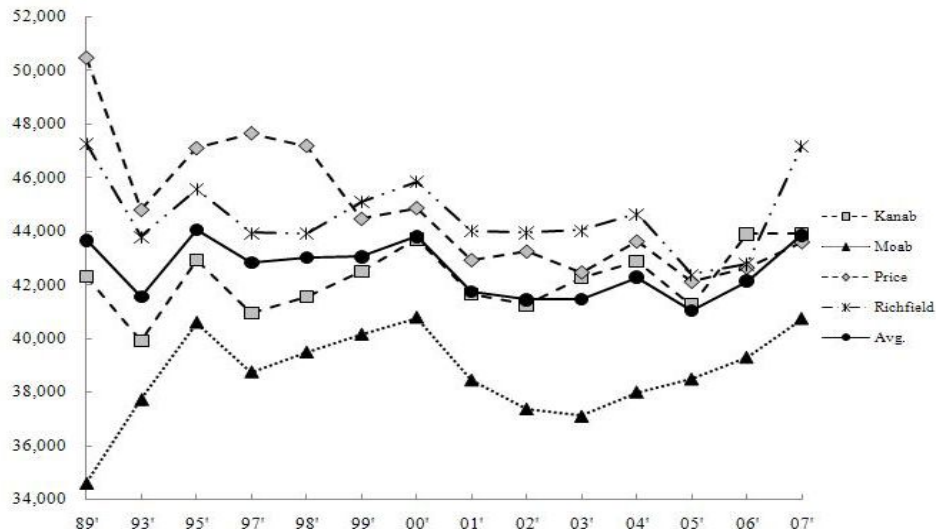


Figure 9. Median Household Income Change in Four Study Communities

Sources: U.S. Census Bureau. Retrieved June 29, 2009

(<http://www.census.gov/did/www/saige/>).

Notes: median household income value by years is an adjusting value for inflation. The median household income value is adjusted for inflation by multiplying a factor equal to the average annual Consumer Price Index Research Series Using Current Methods (CPI-U-RS) factor for 2008, the year we conducted survey (see <http://www.bls.gov/cpi/>).

DESCRIPTIVE STATISTICS FOR SOCIODEMOGRAPHIC CHARACTERISTICS FROM THE SAMPLE

This section discusses demographic and socioeconomic characteristics of the samples from all four study communities as a sociodemographic profile for further analyses in the following sections.

Table 7 presents the percentage distributions for selected sociodemographic characteristics of the survey respondents in the four study areas. The age distribution of the samples in the four study areas was not significantly different, but Kanab had a higher percentage of the population older than 65, which supports my selection criteria of Kanab as a community facing a growing senior population. Moab had a higher percentage

between 55 and 64, and Richfield between 35 and 44, compared to the other three communities. In general, we can argue that Kanab had a larger elder population, then Moab, Price, and then Richfield, based upon the result of age percentage distributions and the *chi-square* test. These sampling results conform to one of the community selection criteria, which require a sample community with a senior population.

The percentage distributions for gender of survey respondents displayed a slightly significant difference among the four study areas ($\chi^2 = 8.2623$; $p < .05$). Richfield had a higher percentage of samples than expected in the male category. Other than that, gender percentage distributions were similar across the communities. However, when examining gender ratios for the survey respondents, it is obvious that males were consistently oversampled across communities. According to 2000 U.S. census data, the gender ratios in Kanab, Moab, Price, and Richfield were 94, 95, 92, and 97, respectively (U.S. Census 2000). In this sample survey the gender ratio for Kanab was 160, Moab 170, Price 194, and Richfield 263 while taken female as a base of 100. There is clearly an overrepresentation bias for the male sample and one should be careful with inferences based on the statistical results of this study, considering this gender-biased data structure. Alternatively, the data will be weighted by gender when analyzing the research models.

The data on marital status across four study communities shows that 73.78% of the sample respondents were married, 5% were single, 12.55% were divorced or separated, and 8.67% were widowed. Meanwhile, Kanab had a higher percentage of widowed respondents (11.98%) than the others, Moab had a higher percentage of being divorced/separated (19.11%), and Richfield had a higher percentage of being married (81.63%).

Table 7. Sociodemographic Statistics by Community

	Kanab	Moab	Price	Richfield	Total	χ^2
Age						35.31**
<=24 (%)	1.24	.00	1.30	.00	.61	
25-34 (%)	6.64	7.08	10.00	11.43	8.90	
35-44 (%)	8.30	11.06	8.70	16.43	11.36	
45-54 (%)	21.99	21.24	24.35	16.79	20.88	
55-64 (%)	22.82	30.09	26.09	19.29	24.26	
>=65 (%)	39.00	30.53	29.57	36.07	33.98	
mean	59.12	57.62	56.70	56.04	57.32	
(s.d.)	(15.54)	(14.40)	(15.93)	(16.51)	(15.68)	
Median	60	58	57	56	57	
Gender*						8.26
female (%)	38.43	37.00	34.05	27.56	33.94	
male (%)	61.57	63.00	65.95	72.44	66.06	
Marital Status						30.06***
married (%)	70.66	64.44	76.52	81.63	73.78	
single (%)	6.20	8.00	3.91	2.47	5.00	
divorced (%)	11.16	19.11	10.87	9.89	12.55	
widowed (%)	11.98	8.44	8.70	6.01	8.67	
Household Income						22.87
less than \$20k (%)	11.56	13.55	16.36	10.98	12.98	
\$20k-\$29.9k (%)	16.00	10.75	11.21	11.36	12.32	
\$30k-\$39.9k (%)	10.67	12.15	9.35	10.61	10.69	
\$40k-\$49.9k (%)	13.78	12.62	11.68	13.64	12.98	
\$50k-\$59.9k (%)	8.44	12.15	9.35	12.50	10.69	
\$60k-\$99.9k (%)	28.00	29.91	31.31	24.24	28.14	
\$100k-\$149.9k (%)	9.78	5.14	7.48	11.74	8.72	
\$150k or more (%)	1.78	3.74	3.27	4.92	3.49	
N=	246	229	234	283	992	

(Continued on the next page)

As to the approximate household income before income taxes for 2007, there was no significant difference across the four study communities after the *chi-square* test ($df=21, p=.351$). This shows that income percentage distributions for survey respondents' households in the four study communities were similar to one another.

Table 7. Sociodemographic Statistics by Community (*Continued*)

	Kanab	Moab	Price	Richfield	Total	χ^2
Education Level						21.26
less than 12 th grade (%)	2.93	5.88	7.46	4.32	5.07	
high school (%)	15.90	17.65	14.91	13.31	15.32	
some college (%)	33.89	27.60	34.65	28.42	31.06	
associate degree (%)	9.21	7.24	12.72	11.15	10.14	
bachelor (%)	25.10	27.15	19.30	25.18	24.22	
graduate (%)	12.97	14.48	10.96	17.63	14.18	
Employment status						33.40**
employed (%)	33.19	39.21	47.32	42.05	40.43	
self-employed (%)	16.81	18.50	8.48	13.78	14.40	
part-time (%)	7.98	6.61	5.80	3.89	5.97	
retired (%)	34.45	30.40	26.79	34.28	31.69	
homemaker (%)	3.36	2.20	7.59	4.24	4.32	
Others (%)	4.20	3.08	4.02	1.77	3.19	
Length of residence						62.66***
<=5 yrs (%)	27.90	11.74	9.82	15.41	16.35	
6-10 yrs (%)	17.60	16.43	12.05	8.65	13.46	
11-20 yrs (%)	19.74	24.88	17.41	21.05	20.73	
21-30 yrs (%)	12.45	16.43	14.73	15.79	14.85	
31 yrs=< (%)	22.32	30.52	45.98	39.10	34.62	
mean	18.81	23.57	31.73	27.30	25.40	
(s.d.)	(18.29)	(16.79)	(21.58)	(19.93)	(19.82)	
Median	12	20	29	25	20	
N=	246	229	234	283	992	

Notes: a comparison of sociodemographic characteristics between US census 2000 data and survey data in four study communities in Utah is presented in Appendix C.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests)

The percentage distributions for the education level of survey respondents across four study communities were not significantly different after the *chi-square* test ($df = 15$, $p = .129$). This shows that the distribution of educational level of the survey respondents in four communities were similar to one another. In the four study communities the highest percentage of the sample had some college education, (31.06%). A bachelor's degree was the next (24.22%), and only 5.07% of sample had less than a 12th grade education.

40.43% of survey respondents reported having jobs and the next largest percentage reported their employment situation was “retired” (31.69%). About 14.40% were self-employed; then came employed part-time job (5.97%), and homemaker (4.32%). After the *chi-square* test ($df = 15, p < .001$), there were significant differences across communities. In Kanab, the percentage of the sample in part-time jobs was significantly higher than in the other communities. A higher percentage of the sample from Moab was self-employed than in the other communities. Price had a higher percentage of its sample in the homemaker category than did the other communities. In addition, we can observe that only about 40% of the respondents were employed and 14.40% of them were self-employed. Also, the percentage of the retirement group was about 32%. The lower employment rate and higher retirement rate may be due to the age distribution in this survey, since there was a high percentage of the elderly included in the survey.

The length of residence of the survey respondents was significantly different across the four communities, based on examining the *F*-test in ANOVA ($F = 18.61, p < .001$). By conducting *post hoc* analysis (using *Fisher-Hayter* pairwise comparisons for a variable community, with unequal cell sizes), we observe that the average length of residence in Kanab (18.81 years) was significantly less than that in Moab (23.57 years), in Price (31.73 years), and in Richfield (27.30 years). The average length of residence in Price was significantly longer than that in Moab or Richfield. The ANOVA and *chi-square* tests consistently showed that Price’s average length of residence in the community was significantly higher than the others’.

These sociodemographic indices provided information that is useful in understanding the age, gender, marital status, income, education level, employment situation, and length of residence distributions in each community. Overall, the age distributions across the study communities were not significantly different, but Kanab did have higher a percentage of respondents that were elderly. The gender ratio across the communities indicates that we may have overrepresentation of males leading to gender bias in our data and care should be taken when we generalize the data to the general population, since voices of female respondents were a bit hidden from this survey research. The percentage distributions of the marital status of survey respondents across the study communities were significantly different and we can see that there are a higher percentage of widowed individuals in Kanab, more divorced/separated individuals in Moab, and more married individuals in Richfield. The percentage distributions of household income in the four study communities were not significantly different.

Like household income, educational level displayed no significant difference across communities, based on the *chi-square* test. Overall, the highest percentage of each sample had some college degree (31.06%), those with a bachelor's degree comprised the next largest category (24.22%), and only 5.07% of the sample had less than a 12th grade education in four communities. We can observe that the sample from Kanab included a higher percentage doing part-time jobs, due to the sample's higher percent of elderly. Moab had a slightly higher percentage of sample located in the "self-employed" category, because greater economic disadvantages push them to maintain their own businesses in order to survive. Price had the highest percentage of sample of "homemakers" stemming from economic development that has relied historically on the mining industry, a

traditionally “male” industry. The length of residence was significantly different throughout the communities surveyed.

GENERAL OPINION/ATTITUDES TOWARD COMMUNITIES

By analyzing the attitudes toward these economic, environmental, and social dimensions of community life, I can compare the similarities and differences of community context in these four study communities. These similarities and differences were used to analyze the relationship between individuals’ experiences of living in the community and their attitudes toward community development alternatives.

As shown in Table 8, 36.03% of the respondents overall said that their community has changed for the better, compared to 42.65% saying it is the same and 21.32% who said it changed for the worse. Also, as shown in Table 8, comparing the percentage distributions for community change categories, we can see that differences existed between communities ($\chi^2 = 92.00$ and $p < .001$). About 30% of respondents in Kanab said their community has gotten worse, significantly more than the average. A similar situation can be found in Moab, where around 33% of respondents said their community had changed for the worse in the past year.

In contrast, Richfield was viewed as changing for the better among nearly half of the respondents, while 13.09% viewed their community as getting worse. Price had been relatively stable in the past five decades, and over 60% of the respondents support this statement. Therefore, we can observe that one third of the respondents in Moab had viewed their community being worse while less than 15% of the respondents in Price and Richfield viewed their communities in this way. Interestingly, it seems that in Kanab

there were two opposing viewpoints toward changes in their community in the past year among the respondents, since higher than average percentages occupied both the “better” group and the “worse” group.

Table 8. General View about Community Change in the Past Year

	Kanab	Moab	Price	Richfield	Total	χ^2
Change for the better	38.79	28.38	26.01	48.00	36.03	92.00***
Stay the same	31.47	38.74	62.78	38.91	42.65	
Gotten worse	29.74	32.88	11.21	13.09	21.32	
N=	232	222	223	275	952	

Notes: percentage presented in cells.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests; degree of freedom = 6).

In order to explore possible explanations for how the respondents’ opinions about their communities changed in the past year, Table 9 lists six aspects of community life and shows the similarities and differences across communities through these aspects. First, we can observe that there was no significant difference between communities in satisfaction with current income level, based on a survey question that asked them to rank their income satisfaction from 1, “strongly dissatisfied,” to 5, “strongly satisfied.” The average rating was about 3 across the communities, showing that the respondents across the communities were neither satisfied nor dissatisfied with their income level in general. On the other hand, the respondents in Kanab and Moab were significantly less satisfied with their job opportunities than those in Price and Richfield, using the *Fisher-Hayter post-hoc* test to compare their average scores after the *F*-test.

Other average ratings of the satisfaction with family, friends, and clear air and water were all over 4 points, showing that in general the respondents were fairly satisfied with the social and environmental dimensions of their community life, except that the

respondents in Kanab were slightly more satisfied with their environment than those in Price.

Table 9. Satisfaction with Community Life by Selected Items

	Kanab	Moab	Price	Richfield	Total	<i>F</i> -value
1. Current income	3.01	2.96	3.09	3.12	3.05	.76
2. Job opportunities	1.72	2.05	2.12	2.19	2.03	3.70*
3. Family	4.22	4.15	4.24	4.29	4.23	.61
4. Friends	4.07	4.03	3.99	4.03	4.03	.20
5. Clear air & water	4.36	4.20	4.07	4.17	4.20	3.46*
6. Greenery	4.28	4.00	4.00	4.18	4.12	4.05

Notes: the score range is from 1 (strongly dissatisfied) to 5 (strongly satisfied); mean score presented in cells.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests; degree of freedom = 3).

Next, when examining the general community environment by comparing four pairs of opposing descriptions, we can observe in Table 10 that the average scores for a friendly-unfriendly and supportive/non-supportive community environment were 5.35 and 4.79, respectively, and there were not significant differences among communities after the *F*-test. Generally speaking, respondents across communities viewed their community as a friendly place (5.35 out of 7 points) and as somewhat supportive (4.79 out of 7 points). On the other hand, the response about trust and safety showed that there were significant differences among the communities. That is, Richfield respondents gave the highest rating in trust (5.19), which was significantly different from Kanab (4.75) and Price (4.60). Interestingly, however, Kanab had the highest ranking of safety (5.73) showing that it is viewed as fairly safe place, compared to Price (5.07) and Richfield (5.22).

Table 10. Community Attitudes in Each Community

	Kanab	Moab	Price	Richfield	Total	F-value
1. Friendly vs. Unfriendly	5.42	5.42	5.13	5.42	5.35	1.84
2. Trusting vs. Distrusting	4.75	4.95	4.60	5.19	4.89	5.28**
3. Supportive vs. Non supportive	4.68	4.91	4.58	4.95	4.79	2.36
4. Safe vs. Unsafe	5.73	5.40	5.07	5.22	5.39	6.07***

Notes: the score range is from 1 (very negative) to 7 (very positive); mean score presented in cells.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests; degree of freedom = 3).

In general, the four communities studied were viewed as friendly communities, but were given a bit lower rating for support. Richfield had the highest rating in trust while Kanab did so in safety. The results for these four pairs of community environment descriptions in Richfield were relatively consistent with ratings near 5 and higher. Price, in contrast, was rated significantly lower than Richfield and Moab in terms of trust and safety, respectively. Interestingly, Kanab was rated highly for environmental safety, while it had few points on trust. *Pearson's r* showed relatively weak correlation ($r = .48$; $p < .001$) between safety and trust in Kanab while a strong correlation ($r = .70$; $p < .001$) was detected in the other three communities. In other words, Kanab was ranked by its respondents as a safe place to live, but the degree of trust among them was not as high as that in the other three communities, even though a strong relationship existed between trust and safety.

After examining the respondents' attitudes and opinions about overall community life and their environment, I focused on the degree of respondents' involvement in local organizations by inquiring whether they were in leadership position or donated money or materials to benefit a local organization. Table 11 shows the percentages of respondents

in local organizations, either in a leadership position or by donating items. Since I did not find significant differences among the communities by testing the *chi-square* values, it is reasonable to say that there were about one third of the respondents taking leadership positions in organizations and about 85% of the total respondents had donated money or items to local organizations in the past year.

Table 11. Respondents' Involvement in Community Organizations by Community

	Kanab	Moab	Price	Richfield	Total	χ^2
In a leadership position						7.7846
None	69.92	70.31	71.37	61.84	68.04	
1-3 orgs	27.24	27.95	26.07	34.98	29.33	
4 or more orgs	2.85	1.75	2.56	3.18	2.62	
Donation						7.0499
None	16.67	13.97	15.81	14.13	15.12	
1-3 orgs	62.60	62.45	58.97	62.19	61.59	
4-5 orgs	14.63	17.90	16.67	19.43	17.24	
6 or more orgs	6.10	5.68	8.55	4.24	6.05	
N=	246	229	234	283	992	

Notes: percentage presented in cells.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests; degree of freedom = 6 for leadership, and degree of freedom = 9 for donation).

Additionally, I examined the general environmental attitudes among the respondents by using a 5-item NEP scale and asking whether they had participated in environment-related activities in the community. The results are presented in Tables 12 and 13, respectively. Again, *Fisher-Hayter post-hoc* pairwise comparisons for means were used here to test if there is statistical difference among the communities. The results of the *F*-test (Table 12) indicate that responses to all five questions in the NEP scale had significant differences across the communities. In response to question 1, Moab respondents were the least likely to agree that the ecological crisis has been greatly

exaggerated, compared to Kanab, then Price and Richfield. When asked whether or not they agreed with the current ecological course leading to a major social catastrophe, the average ratings for Moab were significantly higher than that for the other three communities.

The average rating for question 3 was 2.56, the lowest of all five NEP questions. This average shows that fewer respondents agree that the balance of nature is strong enough to cope with the impacts of industrial activities. Moab had the lowest points in this index, significantly different from Kanab, Price, and Richfield. For question 4, “the earth is like a spaceship with only limited room and resources,” again, Moab had the highest rating and was significantly different from Kanab, Price, and Richfield, showing that the respondents in Moab agreed more that, “The earth only has limited room and resources.” Last, when asked to respond to question 5, “Humans are severely abusing the environment,” only the Moab respondents gave an average rating higher than that in Richfield, reflecting that there was a certain degree of consistency in responses to question five.

In short, we can see that the average points of on the NEP scale in Moab were significantly higher than they were in the other three communities, showing relatively high overall awareness in Moab of the importance of environmental issues. In contrast, Richfield showed less awareness of environmental issues.

Table 12. New Environmental Paradigm Scale for Respondents' Environmental Attitudes by Community

	Kanab	Moab	Price	Richfield	Total	<i>F</i> -value
1. Ecological crisis	3.10	2.50	3.14	3.43	3.07	17.50***
2. Ecological catastrophe	2.85	3.24	2.90	2.70	2.91	6.71***
3. Balance of nature	2.56	2.21	2.56	2.83	2.56	10.32***
4. Limited resources	3.24	3.66	3.24	2.94	3.25	10.14***
5. Abuse environment	3.41	3.70	3.54	3.30	3.48	3.77*

Notes: the score range is from 1 (strongly disagree) to 5 (strongly agree); mean score presented in cells.

1. The so-called 'ecological crisis' facing humankind has been greatly exaggerated.
2. If things continue on their present course, we will soon experience a major ecological catastrophe.
3. The balance of nature is strong enough to cope with the impacts of modern industrial nations.
4. The earth is like a spaceship with only limited room and resources.
5. Humans are severely abusing the environment.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests; degree of freedom = 3).

In order to assess the relationship between attitudes and behaviors with respect to environmental issues, I present the results of asking about respondents' participation in environment-related activities in Table 13. About 40% of the respondents in Moab had contributed their time or money to environmental groups, at least 12% greater than in the other three communities. Also, a higher percentage of the respondents in Moab had attended public hearings or meetings about the environment, contacted government agencies to collect information about environment and voted for or against political candidates in part because of their position on the environment. In contrast, in Price the percentage participating in each activity was lower than the other three communities, showing Price residents were less likely to act for environment-related issues. Kanab and Richfield were somewhat between Moab and Price in terms of participating in environment-related activities.

Table 13. Respondent's Participating in Environmental Activities by Community

	Kanab	Moab	Price	Richfield	Total	χ^2
1. Donation	27.73	39.91	20.54	16.73	25.73	38.7908***
2. Public hearing	31.93	37.73	16.14	30.07	29.05	27.1599***
3. Get information	18.91	22.62	13.12	16.30	17.68	7.4727
4. Vote	59.07	58.74	42.22	42.55	50.31	26.1430***
N=	238	221	221	276	956	

Notes: percentage presented in cells.

1. In the past 12 months, contributed time or money to an environmental or conservation group.
2. Attended a public hearing or meeting about the environment.
3. Contacted a government agency to get information or complain about an environmental problem.
4. Voted for or against a political candidate in part because of his or her position on the environment.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests; degree of freedom = 3).

From Tables 12 and 13, we can see a typical example of the positive relationship between attitudes and behaviors in Moab, which had higher ratings and percentages reflecting environmental attitudes and participation in environment-related activities.

To summarize results derived from the tables shown above, I presented the similarities and differences in respondents' attitudes and opinions about three dimensions of community life across the four study communities. The first dimension of community life involves residents' overall feelings toward their community development. Residents in Kanab and Moab viewed their communities as having gotten worse in the past year, while those in Price thought the community had stayed the same and those in Richfield had the experience of the community getting better. There was no significant difference among the communities in satisfaction with their current income level, and about 3 out of 5 points on average were rated. When rating the degree of satisfaction with job opportunities in community, the respondents in Kanab and Moab were significantly less

satisfied than those in Price and Richfield. In general, the respondents in all the communities were fairly satisfied with their family, friends, and living environment.

The second dimension of community life involves social relationships. Respondents across the communities generally viewed their community as a friendly place and as somewhat supportive. Richfield had the highest rating in trust. Interestingly, Kanab was rated high in safety.

The third dimension of community involves environmental attitudes and behaviors. Moab's ratings on the NEP scale were significantly higher than those of the other three communities, showing that Moab residents were somewhat more aware of the importance of environmental issues. Respondents in Moab not only had higher points on the NEP scale than those in the other three communities, indicating that they were more aware of environmental issues, but they also actively participated in environment-related activities, such as donation, public hearings, information collection, and voting on environmental issues. In contrast, Richfield respondents showed less awareness of environmentally important issues. One possible explanation to this finding is that a group of Richfield residents supported a proposed coal-fired power plant and this economic motivation might decrease Richfield overall awareness of environmental issues. These similarities and differences in respondents' attitudes between communities were used to evaluate the relationship between individuals' attitudes and their preferences for community development.

MODEL TESTING FOR ATTITUDES TOWARD COMMUNITY DEVELOPMENT PREFERENCE

Basic Models for Community Development Alternatives

Table 14 presents the main effects of community differences and development alternatives on individual rural residents' development preferences. In order to analyze the results, I will explain the general statistical information about the model, emphasize the logistic regression coefficients (log odds) of predictor variables that are statistically significant to the outcome variable and then synthesize the findings with the guide of the conceptual frameworks of theory-driven development. The mathematical equations of logistic regression models in Table 14 are as follows:

Eco in Model 1:

$$\ln\left(\frac{\text{prob}(\text{eco})}{\text{prob}(\text{noneco})}\right) = b_0 + b_1\text{Moab} + b_2\text{Price} + b_3\text{Richfield}$$

Env in Model 1:

$$\ln\left(\frac{\text{prob}(\text{env})}{\text{prob}(\text{nonenv})}\right) = b_0 + b_1\text{Moab} + b_2\text{Price} + b_3\text{Richfield}$$

Soc in Model 1:

$$\ln\left(\frac{\text{prob}(\text{soc})}{\text{prob}(\text{nonsoc})}\right) = b_0 + b_1\text{Moab} + b_2\text{Price} + b_3\text{Richfield}$$

Eco in Model 2:

$$\ln\left(\frac{\text{prob}(\text{eco})}{\text{prob}(\text{noneco})}\right) = b_0 + b_1\text{Moab} + b_2\text{Price} + b_3\text{Richfield} + b_4\text{env} + b_5\text{soc}$$

Env in Model 2:

$$\ln\left(\frac{\text{prob}(\text{env})}{\text{prob}(\text{nonenv})}\right) = b_0 + b_1\text{Moab} + b_2\text{Price} + b_3\text{Richfield} + b_4\text{eco} + b_5\text{soc}$$

Soc in Model 2:

$$\ln\left(\frac{\text{prob(soc)}}{\text{prob(nonsoc)}}\right) = b_0 + b_1\text{Moab} + b_2\text{Price} + b_3\text{Richfield} + b_4\text{eco} + b_5\text{env}$$

The general statistical information about the research model is given as N (number of observations), Log likelihood, and *McFadden's Pseudo R²*. In an economic development focus, Model 1, Table 14, the number of observations is 992 cases, and the log likelihood is -633.361 with *p-value* less than .05, meaning that the whole model is statistically significant and indicating we are safe to interpret the effect of predictors on the log odds of respondents' having an economic development focus. However, since the *Pseudo R²* for this model was .008, the full model was not much different from the intercept-only model.

The predictor used in this model was the community variable; Kanab was used as the reference group. There were no statistically significant differences among Moab, Richfield, and Kanab in terms of the odds of having an economic development alternative focus. The higher odds found in Price of having an economic development alternative focus occurred and one possible explanation is that Price had had a mining boom-to-bust cycle in its development history and had to develop diverse economic activities to maintain its economic circumstance.

Using the environmental development focus, Model 1, Table 14, the log likelihood was -331.706 with a *p-value* of less than .001, indicating that this whole model had statistical significance and was safe to explain the relationship between predictor and outcome variables. The *Pseudo R²* of this model was .083, better than the economic development focus, Model 1. Here we observe that, with 95% confidence, the odds of

having an environmental development focus in Moab were 2.07 times greater than they were in Kanab.⁵ Furthermore, a confidence level of 99.9% indicates that the odds of a Richfield resident having an environmental development focus were 6.41 times greater than for Kanab. Residents in Richfield and Moab seem to have significantly higher odds of having an environmental development focus than in the other two communities. One of the possible explanations for this result is that the Richfield community faced an environmental concern with a proposal to build a new coal-fired power plant nearby the community.

The last category in Model 1, Table 14, describes the social development focus. The log likelihood of this category was -620.105 and statistically significant at the 99.9% confidence level. The *Pseudo R*² was .067, smaller than that of the environmental development focus, but higher than that of the economic development focus. Residents of Price and Richfield had a 3.49 times and a 3.28 times lower probability, respectively, of having a social development focus than residents of Kanab.⁶

In Model 2, Table 14, development alternatives were used as the predictor variable to examine the extent to which any other two development alternatives influence the odds of focusing on one development alternative. Model 2, was statistically valid, as shown by the log likelihood *chi-square* test with degrees of freedom (*df* = 5) at the 99.9% confidence level.

⁵ Given an example of log-odds change in model, a 2.07 times change of odds is calculated from the natural logarithm of a logistic regression coefficient .729, denoted as $e^{.729}$.

⁶ The 3.49 times and 3.28 times of odds change came from $e^{1.252}$ and $e^{1.189}$, but the direction of change is opposite.

Table 14. Logistic Regression for Attitudes Toward Community Development Alternatives

	Model 1			Model 2		
	Eco. (s.e.)	Env. (s.e.)	Soc. (s.e.)	Eco. (s.e.)	Env. (s.e.)	Soc. (s.e.)
Predictors						
Community						
Kanab	R .222 (.198)	R .729* (.371)	R -.025 (.214)	R .273 (.207)	R .829* (.376)	R .059 (.222)
Moab	.592** (.193)	.216 (.404)	-1.325*** (.199)	.255 (.207)	.251 (.415)	-1.252*** (.206)
Price	.204 (.189)	1.858*** (.326)	-1.246*** (.191)	.148 (.207)	1.879*** (.335)	-1.189*** (.202)
Alternative						
Eco.				N/A	-2.01*** (.339)	-1.205*** (.150)
Env.				-1.965*** (.337)	N/A	-.450* (.222)
Soc.				-1.200*** (.150)	-.510* (.225)	N/A
Intercept	-.902*** (.140)	-2.970*** (.296)	1.154*** (.149)	.035*** (.181)	-2.282*** (.342)	1.596*** (.167)
Log likelihood	-633.361*	-331.706***	-620.105***	-577.142***	-306.015***	-586.758***
<i>McFadden's Pseudo R²</i>	.008	.083	.067	.096	.154	.117
N	992	992	992	992	992	992

Notes: Log odds presented in cells. Eco.: support for economic development focus; Env.: support for environmental development focus; Soc.: support for social development focus; R: reference group.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests)

The community effect on the odds of having an economic development focus shows that there was no significance statistically between communities. This result did not support the finding in the previously described model that individuals in Price had higher odds of having an economic development focus by up to 1.81 times, compared to individuals in Kanab. Instead, the development alternative predictor had high explanatory power for the type of development focus. That is, at the 99.9% confidence level, those with environmental development alternative preference had 7.13 times less than for the odds of those without an environmental development alternative preference of having an economic development focus.

Similar results were found for social development alternatives. According to the logistic regression coefficients in this category, the odds of individuals with a social development alternative preference having an economic focus were 3.32 times less than for the odds of those without a social development alternative preference. In short, both being in favor of environmental development alternatives and being in favor of social development alternatives decreased the odds of having an economic development focus.

Next, in the environmental development focus, Model 2, Table 14 shows that the log likelihood of the model was statistically significant at the 99.9% confidence level and the *Pseudo R*² was .154. Compared to the environmental development focus in Model 1, this model had a better fit after adding the development alternative predictor and the community variable robustly had explanatory power for the odds of having an environmental development focus. As we can see from the logistic regression coefficients in this model, the odds of an individual from Moab having an environmental development focus were 2.29 times greater than the odds for someone from Kanab at the

95% confidence level and the odds for Richfield were 6.55 times greater than for Kanab at the 99.9% confidence level. These findings were consistent with the findings from the environmental development focus, Model 1, showing that residents in Moab and Richfield had higher odds being focused on environmental development alternatives and no significance between Kanab and Price in this category.

The development alternative predictor for the environmental development focus, Model 2, showed that the odds of having an environmental development focus for those with an economic development alternative preference were 7.46 times less than for the odds for those without an economic development alternative preference at the 99.9% confidence level. Also, the odds of having an environmental development focus for those with social development alternative preferences were 1.67 times less than for those without a social development alternative preference at the 95% confidence level. We can see an obvious tension between having an economic development alternative preference and having an environmental development focus in this model.

When turning to the social development focus, Model 2, Table 14, the log likelihood of this model was -586.758 with *p-value* less than .001, and the *Pseudo R²* was .117, telling that the whole model was statistically significant and a far better than the intercept only model. The odds of an individual in Price having a social development focus were 3.50 times less than for the odds for an individual from Kanab at the 99.9% confidence level. Richfield residents had odds 3.28 times less than for having a social development focus, compared to those of Kanab residents, at the 99.9% confidence level. This model shows there was no statistically significant difference between Kanab and

Moab in terms of the odds of having or not having a social development focus. This finding corresponded to the results of the social development focus model in Model 1.

The odds of having a social development focus for those with an economic development alternative preference were 3.34 times less than for those without an economic development alternative preference at the 99.9% confidence level. The logistic regression coefficients showed that the odds of having a social development focus for those with an environmental development alternative preference were 1.57 times less than in the odds for those without an environmental development alternative preference at the 95% confidence level.

In short, by including community and development alternative predictors in the logistic regression model for attitudes toward community development alternatives, we observe that both predictors were statistically significant for predicting the odds of having either an economic, environmental, or social development focus. Namely, residents of Richfield and Moab were more likely to have an environmental development focus, compared to Kanab and Price, where local and environmental challenges prohibited such behavior. On the other hand, residents of Kanab seemed to have an increased social development focus, showing the unique social condition in Kanab, wherein respondents were more concerned that their community had gotten worse in general based on attitudes and toward local government and residents' expectations for community development. For example, one respondent of Kanab in my survey mentioned that "*The city council in my town doesn't want any growth here. They make poor decisions for our city,*" Many similar comments came from the survey in Kanab, emphasizing the tension between the city council and the residents.

There was a clear relationship among community development alternatives. Having either an environmental or a social development alternative preference resulted in a significant decrease in the odds of having an economic development focus, and vice versa. This shows that respondents who were concerned with environment or social relationships had a tendency not to take economy as their main development priority. This result implies that a traditional dilemma still exists between economy and the environment or between economy and social impact in rural areas.

The results of Table 14 raise several questions that need to be answered. Are individual's attitudes toward community development alternatives influenced by structural factors, such as the current community circumstances, characteristics of the local economic structure, or traditional rural *genius loci*? Communities can be seen as social entities that independently influence individual's attitudes and behaviors. Additionally, does tension consistently exist between economic development and environmental or social development, and, if so, why? This question will be crucial to local policy decision-makers, since, without understanding the dynamics of local people's changing attitudes between different development alternatives, community development strategies might be difficult to form and implement.

Furthermore, each development alternative discussed in this study has a theoretical framework to support the development argument. We should examine the extent to which the effects of development approach would help us understand the odds of changing a respondent's attitude toward development alternatives after controlling the basic model with community and development alternative predictors. Respondent's attitudes toward each development alternative are examined by the basic model with

community and alternative predictors and the specific predictor variables suggested from economic, environmental, and social development frameworks. With this strategy, I have been able to examine the extent to which each community development approach is applied resulting in an understanding of attitudes toward community development alternatives and see how community and development alternative predictors would change their explanatory power for the odds of having any one development focus. A complete model with all predictor variables will be built for each development alternative focus in order to assess how individuals' attitudes will change toward community development in a global sense.

Research Models for Community Development Frameworks

Model for economic development framework. According to the basis of the economic development approach, economic conditions have direct effects on local residents' demands for economic improvement and job availability for community youth, in order to avoid population outflow. In this economic development model several economic predictor variables were considered and examined for their individual effects in order to see if this theoretical framework helps us understand local residents' attitudes toward community economic development alternatives.

The complete economic alternative model, shown in Table 15, was statistically significant at the 99.9% confidence level (the log likelihood was -516.644), showing that the effects of the predictor variables were a worthwhile means with which to assess the odds of having an economic development alternative preference. In addition, the *Pseudo R*² was .133, indicating that the whole model was a far better one than the intercept only

model, and even better than the community variable only (*Pseudo R*² = .008) and community and development alternative predictors model (*Pseudo R*² = .096) in Table 14.

When checking the effects of predictor variables in this model, we observe that there still were no statistically significant differences among communities. That is, the effect of community was dismissed after we considered economically related variables. This result did not surprise us because the demands of economic development are universal. However, the point to consider is, how can economic development bring the maximum benefits to all or the most local residents and cause the minimum tension with other development perspectives? So we see that people who support either environmental or social development alternatives would tend to be less likely to consider economic focus development. That is to say, for individuals with an environmental development alternative preference, the log odds of having an economic development focus were 9.64 times less than the odds for those without an environmental development alternative preference. Similarly, the odds of an individual having an economic development focus were 4.17 times less than the odds for those with a social development alternative preference than for those without a social development alternative preference. These results indicate that economic development always causes a potential tension with either environmental or social development focus.

Turning to the predictors related to the economic development framework, we observe that all economic framework predictors were not statistically explanatory with an economic development focus. This result did not support the first research hypothesis. Namely, for economic satisfaction variables, individuals' ratings of their satisfaction with current income level, financial security during retirement, and job opportunities did not

show significant effects on the odds of have an economic development focus. Also, an individual's degree of satisfaction with current community strategies to maintain or enhance the local economy did not make a significant difference statistically in terms of an economic development focus.

Since the average degree of satisfaction of all respondents was 10.96 on a scale of 0 to 20, with a standard deviation of 3.78, these descriptive statistics indicate that the respondents' level satisfaction with community economic development strategies was neither strongly dissatisfied nor strongly satisfied. By testing three main predictors suggested by the economic development approach, we showed that their effects were not statistically significant on the odds of an individual's having an economic development focus. One possible explanation is that the demand for economic development is somehow universal within rural areas and the variance of this outcome could not be explained by these economically related predictors. Another possible explanation for the neutral effects of an economic development framework may be the result of external economic conditions on local residents thereby not affecting their satisfaction with individual security. In this sense, the variability in the general economic satisfaction was too small to be a significant predictor and provide an explanation regarding the odds of having, or not having, an economic development focus.

Similar situations happen to community strategies for local economic development. That is, the change in the odds of having an economic development focus was not predicted significantly by the variance of respondents' satisfaction with local development strategies.

Table 15. Logistic Regression for Three Development Framework Models

	Economic (s.e.)	Environmental (s.e.)	Social (s.e.)
Predictors			
Community			
Kanab	R	R	R
Moab	.177 (.222)	.710 (.511)	-.053 (.246)
Price	.176 (.225)	.444 (.572)	-1.231*** (.242)
Richfield	.142 (.226)	2.210*** (.467)	-1.247*** (.236)
Alternative			
Eco.	N/A	-2.727*** (.507)	-1.507*** (.172)
Env.	-2.266*** (.372)	N/A	-.792*** (.249)
Soc.	-1.427*** (.161)	-.721* (.308)	N/A
Economic Factors			
Economic Satisfaction	.019 (.015)		
Business Devp.	-.030 (.026)		
Primary Sector Devp.	.014 (.031)		
Gov. Connection	.177** (.068)		
Environmental Factors			
Clean Air & Water		-.593** (.187)	
Greenery		.834*** (.218)	
Green features in house		.980** (.356)	
Recycle		.158** (.053)	
NEP scale		.023 (.047)	
Env. Involve		.035 (.082)	

(Continued on the next page)

Table 15. Logistic Regression for Three Development Frameworks Model (*Continued*)

	Economic (s.e.)	Environmental (s.e.)	Social (s.e.)
Predictors			
Social Factors			
Community change			
Worse			R
Same			-1.219*** (.240)
Better			-1.045*** (.247)
NB distance			-.193* (.095)
Social Satisfaction			.058* (.023)
Community support			.057* (.027)
Support local org.			.229* (.114)
Demographic			
Age	-.012* (.005)	-.018* (.009)	-.012* (.006)
Education			.189*** (.058)
Length of residency			.006 (.005)
Intercept	.632 (.497)	-4.274** (1.405)	1.444* (.640)
Log likelihood	-516.644***	-176.582***	-485.613***
<i>McFadden's Pseudo R</i> ²	.133	.261	.178
N	920	653	878

Notes: Log odds presented in cells. Eco.: support for economic development focus; Env.: support for environmental development focus; Soc.: support for social development focus; R: reference group.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests)

This result indicated that the attitudes toward economic development would not be significantly influenced by individuals' satisfaction with objective community development strategies, but by one's stated attitudes toward environmental or social concerns. In other words, direct economic development demand would not reflect on an

individual's satisfaction with current economic conditions, but on his or her initial attitudes toward environmental and social concerns. Therefore, it would be necessary to examine the relationship between the other two development alternatives and individual attitudes toward objective social facts before understanding the associations between attitudes toward economic development and attitudes toward local economic circumstances.

Based on this analysis, the logistic regression model in Table 15 did not produce statistical significance to support the first research hypothesis, "rural residents' dissatisfaction with local economic conditions increases their supporting of economic related development."

Model of environmental development framework. In the environmental development model (Table 15), the predictor variables were used to examine the environmental development conceptual framework: individuals' environmental concerns and behaviors will affect their attitudes toward local environmental development alternatives. The selected predictor variables were satisfaction with local air and water cleanliness, local greenery, green design features built into the home, recycling, the NEP scale, and participation in environment-related activities. I examined the associations between rural residents' values and behaviors towards their local environment and their attitudes toward environmental development alternative. Furthermore, by examining the environmental development approach, we might expect an individual's environmental concerns and behaviors to have indirect effects on his or her attitudes toward economic development alternatives through his or her attitudes toward environmental development.

The whole model of environmental development framework reached statistical significance at the 99.9% confidence level (log likelihood = -176.582), indicating that the predictor variables used were useful in predicting the odds of the outcome variable. Also, the *Pseudo R*² of this model was .261, implying that the whole model was far better than the intercept-only model, which enhanced my confidence in the association between the predictor variables and outcome variable.

As we observe from the environmental development model (Table 15), the affect of the community variable was significant. That is, the odds of having an environmental development focus for individuals in Richfield were 9.12 times greater than for those in Kanab. This result was consistent with the environmental model in Table 14. Obviously, since Richfield had been debating a proposed coal-fired power plant at the time the data was collected, the potential threat and uncertainty of this project made local residents assess environmental impacts on their surroundings and could explain why Richfield had higher proportion of residents with an environmental development focus.

The association among the three development alternatives in this model shows that tension between economy and the environment is still significant. Specifically, the odds of having an environmental development focus, for someone who supported economic development alternatives, were .07 times for the odds of someone who did not support an economic development alternative at the 99.9% confidence level. This observation implies that people with an economic development alternative preference had a tendency to be less concerned about how the environment would be affected in the process of developing the local economy. In addition, there was a predictable negative association between having a social development alternative preference and having an

environmental one, based on the data from this table. According to the logistical coefficients, the odds of having an environmental development focus, for someone with a social development alternative preference, were .49 times the odds for someone without a social development preference at the 95% confidence level. This implies that those with concern about social cohesion at the local level were less focused on the issue of environmental development, or they might oppose any public debate, believing that it might cause tension in their society.

When analyzing the effects of environmental predictors in the environmental development model, the key predictor variable, NEP scale, did not provide a statistically significant explanation for the change in the odds of having an environmental development focus ($p\text{-value} = .616$). One of possible explanations for this finding is that the NEP scale was developed to measure environmental attitudes in the early 1970s and the content of this scale had circulated and been appreciated widely among society, even become more politically correct as a responsible member of the earth. As a result, the average score on the NEP scale for all respondents was 15.26 and the standard deviation was 3.75, and the distribution of the scores was skewed to the left. In other words, the variability of the NEP scores was too small to predict the change in the odds of having an environmental development focus.

In addition, the predictor variable of environmental activity involvement did not show significant explanatory power for the odds of having an environmental development focus, either, implying that respondents' attitudes toward environmental development alternatives were not necessarily determined by their environmental activity involvement. Participating in environment-related activities, such as donating money to

environmental groups, attending public hearing, or reporting environmental problems to government agencies, would be a way to show one's concern about the living surroundings, but would not mean that environmental development should be the primary strategy of one's community. Therefore, in order to clarify the association between environmental values and behaviors and the attitudes toward environmental development alternatives, more specific environmental friendly attitudes should be defined and tested.

The logistic regression coefficient in the study of the "clean air and water" variable showed that for every one point increase in satisfaction with local air and water, the odds of having an environmental development focus were about reduced about 1.81 times at the 99.9% confidence level. In other words, the less satisfied a respondent was with local air and water quality, the greater the odds he would have an environmental development focus. This finding implies that rural residents prioritized the quality of their environmental and valued clean air and water highly.

By asking respondents the extent to which they were satisfied with community greenery, I found that, for every one point increase in satisfaction with community greenery, the odds of one's being in environmental development focus increased 2.30 times at the 99.9% confidence level. This result indicates that the more a community has greenery, the greater the odds of residents having an environmental development focus.

Respondents were asked, "Was your home or any portion of it built with recycled materials, wood certified as sustainably harvested, or any other green design features?" The logistic regression coefficient showed that the response was statistically associated with the outcome variable. That is, the odds of having an environmental development focus, for those who applied green features in their house, were about 2.67 times the odds

for those without and environmental development focus. Obviously, this predictor straightforwardly reflected the respondents' degree of environmental friendly behavior and showed the explanatory power on the change in the odds of having an environmental development alternative preference at a statistically significant level.

Finally, I examined the association between recycling behavior and having an environmental development alternative preference. The logistic regression coefficient showed that for every one point increase in recycling behavior there was 1.17 times increase in the odds of having an environmental development focus at the 99% confidence level. Certainly, when a respondent recycles more waste, we can assume that he or she is more environmentally friendly has a greater tendency to support environmental development alternatives in their community.

In short, after examining these environmental attitude and behavior predictors, I found that the behavior related directly to environment protection produced strong, statistically significant effects on the change in odds of a respondent's attitude toward environmental development alternatives. Although there was no significant explanatory power of the NEP scale in the environmental development model, individuals' values and behaviors toward the environment have proven their influence on respondents' attitudes toward sustainable environmental development in their local communities. Therefore, as to the second research hypothesis, "Rural residents' environmental friendly attitudes and behaviors influence them to support environmentally focused development alternatives" this environmental development model produced statistically significant results to support the positive association between individual's environmental friendly values and

behaviors and their attitudes toward environmental-focus development in their community. In other words, I failed to reject the second hypothesis.

Model of social development framework. As to the last model for the social development framework, the initial purpose of examining this model was to understand the association between individual social relations and community collaborative action as a guide to future development alternatives. By selecting several predictor variables corresponding to the social development framework, the respondents' attitudes toward social development alternatives can be examined systematically.

Before discussing the effects of individual social-related predictor variables on the outcome variable, the goodness of fit of the whole model should be examined. As shown in the social development model (Table 15), the log likelihood was -485.613 at the 99.9% confidence level, showing the effects of predictor variables here were reliable to estimate the change in the odds of the outcome variable. Also, the value of *Pseudo R*² was .178, showing that the whole model was far better than the intercept-only model, justifying my confidence in examining the association between predictor and outcome variables in the social development model.

As to the individual effects of predictor variables on the attitude toward social development alternatives, we can see that almost all logistic regression coefficients were statistically significant at 95% confidence level, at least. When checking the effects of community variables, we observe that the odds of having a social development focus for respondents in Price were 3.42 times less likely than the odds for respondents in Kanab at the 99.9% confidence level. Similarly, the odds of respondents from Richfield having a social development focus were 3.48 times less likely than the odds for Kanab respondents

at the 99.9% confidence level. A significant difference between Kanab and Moab was not detected in this model. From this result, we can see that respondents in Kanab had higher odds of having a social development focus. To some degree, the social characteristics of Kanab were accentuated and placed more emphasis on social values and community cohesion.

Turning to the development alternative variables, we observe that the negative relationship between the three development alternatives have consistently been demonstrated by different research models thus far with odds of having a social development focus significantly lower for those with an economic development alternative preference than for those without. One possible explanation for this tension is that the potential side effects of pursuing economic development would be urbanization, increase in crime, and other social problems, which are unbearable to those who prioritize social development alternatives as a preliminary community development strategy.

Additionally, negative association between social development and environmental alternatives was found meaning that those who were concerned with environmental development alternatives would be less likely to have the resources or access to local social connections to deal with public issues, compared to the group emphasizing economic development as a primary priority for their community (c.f. Allen et al. 2008). This implies that environmental issues are not only about the environment itself, but also about the general public involvement. Therefore, for those who are concerned about environmental development in the community, it should be necessary and inevitable to get involved in local social relationships and seek the majority's understanding of how the environment interacts with their living surroundings.

There were several predictor variables selected for the social development model. The first one, “community change,” reports the general attitude a respondent had toward his or her community in the past year. According to the logistic regression coefficients of this variable, the worse the view of the community had been, the more likely a respondent was to support social development alternatives. Specifically, the odds of having a social development focus, for those viewing community as staying the same, were 3.39 times less likely than the odds for those viewing community as getting worse. The odds of having a social development focus, for those viewing community as getting better, were 2.84 times less likely than the odds for those viewing community as getting worse at the 99.9% confidence level. This change in the odds showed that negative attitudes toward community change in general would influence local residents to seek community collaborative action to change their worsened situation. We can see the community as a collective social entity, which brings together the people living within it in order to cope with the challenges they have faced. It seems that this awareness of the community getting worse is an impetus to generate community change.

Another socially related predictor variable is the respondents’ social distance from their neighbors in general. This predictor helps us understand, in the context of community change, to what extent the social distance from one’s neighbors influences an individual’s attitude toward social development. The logistic regression coefficient of this variable showed that for every one point increase in closeness with a respondent’s neighbors, there was 1.21 times decrease in the odds of having a social development focus at the 95% confidence level. This finding could imply that, in rural communities, social distance from neighbors is an important index with which to observe community

change and the extent to which the macro change affects one's attitude toward social development demands, as a way of living in a traditional *gemeinschaft* society (Tönnies 1963).

“Social satisfaction,” an aggregated factor represents the respondent's satisfaction with relationships with family, friends, and marriage. For every one point increase in a respondent's social satisfaction, the odds of having a social development focus increased 1.06 times at the 95% confidence level. Certainly, family values and close ties with friends were important to those who lived in rural areas, and because of the close ties to family and friends, respondents would tend to be more concerned with community social development in order to maintain harmonious social relationships.

Another piece of evidence to support the argument above is the results from the variable of community support. Respondents were asked: “If, tomorrow, a major disaster occurs, who do you think should work together to cope with the situation?” For every one point increase in viewing informal social groups (household, neighbors, and local church) as an important strength to cope with tough situations, the odds of having a social development focus increased 1.06 times at the 95% confidence level. Similarly, the variable of “support for local organization,” indicated this contribution of social support. For every one point increase in supporting local organizations, the odds of having a social development focus increased by 1.26 times at the 95% confidence level.

In short, all social related predictor variables in this social development model indicated significant effects on the change in the odds of having a social development alternative preference. This significant association between social relationships and social development concerns supported the arguments for a social development framework or

approach. This finding did support the third research hypothesis, “Rural residents’ close social relationships within the local community influence them to view community empowerment as the primary concern when the local community faces rapid social change.”

In rural areas, social relations have an important value to the rural residents; community changes affect their traditional social connections and ties cause substantial changes in residents’ ability to respond or cope with the situation. I think this is a valuable finding, supporting the argument of rural community as a traditional *gemeinschaft* society and from which social collaborative action for a better future becomes more possible and realistic.

Models of Development Alternatives with Other Control Variables

Table 16 presents the logistic regression coefficients of all predictor variables on individuals’ attitudes toward economic, environmental, or social development alternatives.

Model of economic development alternative. The full model of the economic development frameworks in Table 16 showed statistical significance to explore the effects of individual predictor variables on the odds having an economic development focus (the log likelihood = -297.672, $p\text{-value} \leq .001$). Also, the *Pseudo R*² was .195, showing the full model of economic development alternatives was far better than the intercept-only model. This result convinced me to analyze the effects of the predictor variables selected here on the outcome variable.

Following the same analytic strategy as above, the log odds of predictor variables were examined from top to bottom. When I checked the effects of the community variables on the economic development model, it showed no statistical significance, which means that being in a different community resulted in no significant change in the odds of having an economic development focus. This finding is consistent with what we have found in the prior economic development models.

The association between respondents' attitudes toward economic, environmental, and social development alternatives consistently displayed an initial tension. Specifically, in this full model of the economic development framework, the odds of having an economic development focus, for those with an environmental alternative preference, were 12.58 times less likely than the odds for those without an environmental alternative preference. A negative association was also detected between economic and social development alternatives.

Also, economic-related variables did not produce statistically significant effects on the odds of having an economic development focus. A respondent's satisfaction with his or her individual economic condition, community development strategies for local business, and primary industry promotion, did not have significant explanatory value for the change in the odds of having an economic development focus. This lack of association between an individual's attitudes toward individual and community-level economic conditions and his or her attitude toward economic development preference could imply that, in general, the variability of respondents' economic conditions and attitudes toward community economic development strategies was not great enough to predict the outcome variable.

Table 16. Logistic Regression for Full Models

	Economic (s.e.)	Environmental (s.e.)	Social (s.e.)
Predictors			
Community			
Kanab	R	R	R
Moab	.189 (.315)	.596 (.546)	.062 (.346)
Price	.172 (.331)	.271 (.616)	-1.051** (.335)
Richfield	.114 (.320)	1.980*** (.508)	-1.283*** (.328)
Alternative			
Eco.	N/A	-2.707*** (.519)	-1.870*** (.233)
Env.	-2.532*** (.508)	N/A	-.718* (.320)
Soc.	-1.806*** (.230)	-.787* (.347)	N/A
Economic Factors			
Economic Satisfaction	.012 (.021)	-.012 (.030)	.021 (.021)
Business Devp.	.001 (.035)	.054 (.053)	.046 (.036)
Primary Sector Devp.	-.064 (.041)	-.077 (.063)	-.036 (.043)
Gov. Connection	.144 (.088)	-.082 (.151)	.085 (.093)
Environmental Factors			
Clean Air & Water	.106 (.155)	-.641** (.218)	.130 (.154)
Greenery	.216 (.149)	.961*** (.279)	-.054 (.159)
Green features in house	.185 (.305)	.746† (.406)	-.016 (.310)
Recycle	-.051 (.043)	.120* (.060)	-.046 (.043)
NEP scale	-.055 (.035)	.014 (.052)	-.055 (.035)
Env. Involve	.081 (.068)	-.014 (.098)	.170* (.068)

(Continued on the next page)

Table 16. Logistic Regression for Full Models (Continued)

	Economic (s.e.)	Environmental (s.e.)	Social (s.e.)
Predictors			
Social Factors			
Community change			
Worse	R	R	R
Same	-.520 [†] (.297)	.133 (.481)	-1.316*** (.326)
Better	-.145 (.306)	.154 (.502)	-1.154*** (.339)
NB distance	-.049 (.127)	.045 (.188)	-.303* (.131)
Social Satisfaction	-.006 (.033)	.016 (.048)	.061 [†] (.033)
Community support	.060 (.040)	.016 (.060)	.076 [†] (.039)
Support local org.	.343* (.150)	.074 (.226)	.110 (.151)
Demographic			
Age	-.020* (.008)	-.011 (.012)	-.011 (.008)
Education	-.115 (.081)	.157 (.125)	.041 (.081)
Length of residency	.005 (.006)	-.007 (.009)	.006 (.006)
Intercept	.781 (1.208)	-5.109** (1.889)	2.089 [†] (1.200)
Log likelihood	-297.672***	-154.512***	-294.604***
<i>McFadden's Pseudo R²</i>	.195	.262	.211
N	562	562	562

Notes: log odds presented in cells. The number of cases in the full models dropped down to 562 due to the variable, Green features in house, had only 682 cases being eligible.

Eco.: support for economic development focus; Env.: support for environmental development focus; Soc.: support for social development focus; R: reference group

[†] $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed tests)

On the other hand, we also observe that no environmental-related variables produced statistically significant effects on the odds of having an economic development focus, but environmental development alternative preferences did result in a decrease in

the odds of having an economic development focus. This is an interesting finding because individual environmental values and behaviors did influence respondents' environmental attitudes toward community development, but such environmentally friendly values and behaviors were not necessary to predict their negative attitudes toward economic development demand. As a result, I contend that the tension between economic and environmental development would be minimized as long as both sides can have sufficient discussion on the issues that really concern them in the process of community development. Otherwise, from the economic and environmental model comparison, we cannot understand what those supporting environmental action were against, for, or concerned about in terms of economic development alternatives, and vice versa.

With regards to socially related predictor variables in the economic development model, two variables produced statistically significant effects on the odds change of having an economic development focus: the community change variable and the support for local organizations. For the community change variable, we observe the odds of an economic development focus, for those viewing the community as staying the same were 1.68 times less likely the odds for those viewing the community as having gotten worse at the 90% confidence level.

In addition, we observe that, for every one point increase in supporting local organizations by donating money or materials, the odds of having an economic development focus increased 1.41 times at the 95% confidence level. This result showed that those who actively supported the development of local organizations would tend to support economic development alternatives for their community.

Lastly, the logistic regression coefficients of the demographic variables showed that only age had statistical significance for predicting the change in the odds of the outcome variable. That is, for every one year increase in age, the odds of having an economic development focus were decreased by about 1.02 times at the 95% confidence level. This finding implied that the younger respondents would tend to be more supportive of economic development alternatives, although the odds ratio was very small.

In brief, the results of the full model for economic development alternatives in Table 16 were consistent with the previous economic models in Tables 14 and 15. The tension between economic, environmental, and social development alternatives reached statistical significance. Also, no environmental relative variables produced statistically significant effects on the change in the odds of having an economic development focus. However, two of the socially related development variables were statistically significant to predict the change in the odds of the outcome variables: those who viewed community as having gotten worse tended to have higher odds of having an economic development focus and those who supported local organizations showed greater odds of having an economic development alternative preference. Although the odds ratio was small, we observe that younger people had higher odds of having an economic development focus.

Model of environmental development alternative. In the full model of environmental development alternatives (Table 16), the value of log likelihood with *p-value* revealed that this model was statistically significant to assess the effects of individual predictor variables on the odds change of outcome variable. Also, the *Pseudo R²* reached .262, meaning that the full model of predictor variables selected here was a far

better result than the intercept-only model, making this full environmental model worthwhile to discuss further.

The findings on the effect of the community variable on this model indicate that the odds of having an environmental development focus for respondents in Richfield were 7.24 times greater than the odds for respondents in Kanab. I have discussed one of the possible explanations for this statistically significant difference in the odds between Richfield and other study communities. In Richfield the debate of a potential coal-fired power plant had received a great deal of attention. The differences in odds among the other three communities was not statistically significant, showing that environmental concerns would not be different throughout the geographic territory unless a specific environmental issue arose that local residents would have to cope with.

Next, the associations among the three development alternatives were consistently negative. Certainly, the odds of having an environmental development focus, for those having an economic development alternative preference, were significantly lower—by 14.98 times—than for those not having an economic development alternative preference at the 99.9% confidence level. This initial tension between economic and environmental development alternatives was so significant that the local community should put more effort into allowing sufficient and efficient open discussions on this issue.

I also observed a slight, although significant, difference in the odds between social and environmental development alternatives. The odds of having an environmental development focus for those with a social development alternative preference were 2.20 times less likely than the odds for those without a social development preference at the 95% confidence level. To explain this slight difference between social and environmental

development alternatives preferences, I would argue that, among those concerned with social connections and relationship, the environmental issues were given less attention in the public forum because environmental problems might cause possible tension among local residents that would affect community affiliations, an important traditional value for rural communities. However, this argument should be tested through further scientific examination.

When I examined the effects of predictor variables based on both economic and social development frameworks on the change in the odds of having an environmental development focus, the logistic regression coefficients found had marginal significance for predicting the outcome variable. Obviously, individual attitudes toward community circumstances in terms of economic development and social relationships would not produce statistical explanatory power for an individual's environmental attitude toward community development preferences. None of the demographic predictor variables showed significant effects on the odds of having an environmental development focus. There was no observable, statistically significant association between age or education and individuals' attitudes toward environmental development alternatives—age cohort and educational level would not influence an individual's standing or not standing on environmental development as a primary community development concern.

However, we still observe a positive association between individual environmental values and behaviors and individuals' attitudes toward environmental development in the local community. For every one point increase in satisfaction with local air and water quality, the odds of having an environmental development preference were reduced by 1.90 times at the 99% confidence level. We also observe that for every

one point increase in satisfaction with the available greenery in the community, the odds of having an environmental development focus increased by about 2.61 times at the 99.9% confidence level. The results of these two predictor variables showed that community air and water quality would be a significant factor influencing one's attitudes toward community development as an environmental issue, and that more greenery would result in an individual's positive attitudes toward environmental concerns.

In terms of individual environmental behaviors, those with green features in their houses and those who displayed recycling behaviors were significantly more likely to express an environmental development preference. For every one point increase in having green features applied in the house, the odds of having an environmental development focus increased by 2.11 times at the 90% confidence level. Also, for every one point increase in individuals' recycling behavior, the odds of having an environmental development focus increased about 1.13 times at the 95% confidence level. The findings here were consistent with the model for the environmental development framework (Table 15). The strong association between environmental values and behaviors and attitudes toward environmental development was found, although the NEP scale still did not produce statistically significant explanatory power for the change in the odds of the outcome variable, as shown in the environmental model (Table 15).

Model of social development alternative. For the full model of social development alternative (Table 16), the log likelihood was -294.604 at the 99.9% confidence level, indicating that the model reached statistical significance for exploring the effects of individual predictor variables on the outcome variable. Also, we observe that the *pseudo* R^2 was .211, showing that the full model was a better one than the intercept-only model

for analyzing the associations between predictor and outcome variables. Because of the statistical robustness, I am going to assess the effects of the predictor variables on the change in the odds of having a social development focus in this model.

Certainly, the logistic regression coefficients of the community variables here were consistent with the findings in the previous model for the social development framework. The odds of Price and Richfield residents having a social development focus were 2.86 and 3.61 times less, respectively, than the odds for Kanab residents at the 99% confidence level. I did not observe a large change in the odds ratios between this model and the model of the social development framework in Table 15, showing that respondents from Kanab and Moab tended to consider social connections and relationships as a primary priority of community development alternatives because of their population characteristics and community circumstances.

The odds of having a social development focus, for those with an economic development alternative preference, were 6.49 times less likely than the odds for those not without an economic development alternative preference at the 99.9% confidence level. Also, the odds of having a social development focus, for those with an environmental development alternative preference, were 2.05 times less than the odds for those without an environmental development preference at the 95% confidence level. Still, the association between economic and social development displayed a strong negative correlation that was consistent with in the findings from the previous models.

Surprisingly, I did not observe any statistically significant effects of economic-related predictor variables on the change in the odds of having a social development focus. This observation implies that individual attitudes toward community economic

conditions did not produce direct effects on their attitudes toward social development alternatives, but respondents' attitudes toward economic development did produce significant effects on the change in the odds of having a social development alternative preference. Reasons for tension between economic and social development alternatives were not clear in this model. However, I did provide a possible argument to explain these tensions.

As to the effects of environmental predictor variables on the change in the odds of having a social development focus, respondents' active degree of involvement in environmental activities showed statistical significance for predicting the change in the odds of this outcome variable. That is, for every one point increase in a respondent's involvement in environmental activities, the odds of having a social development focus increased about 1.19 times. This finding was reasonable because the basis of the social development framework is social involvement, and environmental activity/involvement is one way to participate in local affairs for the community.

We observe that the logistic regression coefficients of predictor variables based on the social development framework were similar to those in the model of the social development framework in Table 15. That is, in general, those viewing community as getting worse would tend to be more concerned about social collaborative action as a pathway for future development alternatives. Specifically, the odds of having a social development focus for those viewing community as staying the same were 3.73 times less likely than the odds for those viewing the community as being worse at the 99.9% confidence level. The odds having a social development focus for those viewing the

community as being better were 3.17 times less likely than the odds for those viewing the community as being worse at the 99.9% confidence level.

The association between a respondent's distance from neighbors and social development alternative preference was confirmed significantly. For every one point increase in the proximity of one to one's neighbors,, the odds of having a social development focus decreased 1.35 times at the 95% confidence level. Those with high satisfaction with social ties would tend to consider social development as a primary community strategy, and for every one point increase in a respondent's social satisfaction, the odds of having a social development focus increased about 1.06 times. Also, the affect of the community support variable was consistently positive. For every one point increase in viewing informal social groups (household, neighbors, and local church) as an important strength to cope with tough situations, the odds of having a social development focus increased 1.08 times at the 90% confidence level.

The effects of age and education did not reach statistical significance for predicting the change in the odds of having a social development alternative. I also cannot find a significant connection between the length of residence and the change in the odds of having a social development focus. This result can be understood because, according to the data collected here, the variance of the length of residence was too small to be used to explain the change in the odds of the outcome variable.

SUMMARY OF RESEARCH RESULTS

In the summary section, I focused on the findings from census and survey data, and determine the associations between individuals' attitudes toward community

circumstances and individuals' attitudes toward development alternatives across four rural communities. I discussed how the macro social and economic changes and individual attitudes are embedded in the community context and then demonstrated the association between community circumstance and rural people's attitudes toward their future development. Therefore, in the following section, I will review the research findings from the study communities to get a better understanding of development issues in rural areas.

The population changes in these four study communities corresponded to the economic structure changes in the past decades. That is, Kanab had had a stable population, along with a smooth shift in the industrial structure from a primary, secondary, and then tertiary sector development focus. This is a quite typical rural-urban continuum development pattern. In addition, I would argue that since Kanab was facing a growing senior population, the primary development demands in my original research hypothesis would be strong social ties within the local community, influencing them to view community empowerment as the primary concern when the local community faces rapid social change. In the research models of social development alternatives, I found evidence to support this argument.

In contrast, Moab had been facing population decrease and economic disadvantages, due to lack of an industrial development foundation. In recent decades, it has been devoted to developing a recreational economy by using the natural resources surrounding it to support its economic activities; however, it had still been facing tough economic performance in the areas of higher poverty rates and lower mean household income. As a result, I would argue that the recreation-oriented development strategies

have been challenged and the economic resuscitation strategies relying on mining uranium would be brought to the table.

Price had experienced both population and economic boom-to-bust cycles in past decades, but since its economic foundation is more diverse, Price was still a quite prosperous town. And, last, Richfield had been facing increased population because of its geographic accessibility and natural resource extraction history. Now, they are facing a hot debate over a proposed coal-fired power plant plan, which obviously segregates this community into two opposing groups; one group supports this economic stimulation program and the other stands on the environmental protection side to reject this environmentally unfriendly plan. Ironically, when we look at its economic performance in past decades, Richfield had been relatively economically advantaged in its history of community development and its social infrastructure was also healthier than the other three study communities, implying that Richfield residents are able to pursue a better quality of life and pay more attention to non-economic development orientation.

As to the results of research models for testing the three hypotheses, the hypothesis for the economic development framework was not supported here, but hypotheses for both the environmental and social development frameworks were. It is the basis of the economic development framework that economic conditions have direct effects on local residents' demand for economic improvement and job availability for the youth; the economic model individuals' ratings of their satisfaction with current income level, financial security during retirement, and job opportunities did not produce statistically significant effects on the odds of one's being in economic development focus. Obviously, the level of an individual's satisfaction with economic conditions did not

affect the strength of his or her demand for economic development in the local community. These rural communities had not launched either very progressive or very challenging development strategies to attract much attention from the locals or cause trenchant disapprobation. I have argued that the effect of external economic condition on local residents was similar, as was the degree of their satisfaction with their economic security. Therefore, the variation in general economic satisfaction was too small to be a significant predictor of the change in the odds of having an economic development focus.

In contrast, the basis of the environmental development framework was supported in the model, although the key predictor variable of the NEP scale did not produce statistically significant effects on the change in the odds of having an environmental development focus. My explanation for this finding is that the NEP scale was developed to measure individuals' environmental attitudes in the early 1970s and the content of this scale has circulated and been appreciated widely among society and has even become politically correct. As a result, the variance of the NEP scores among respondents was too small to predict the change in the odds of having an environmental development focus. However, after examining the environmental value and behavior predictor variables, such as satisfaction with community air and water quality, greenery, green features applied in house, and recycle, we observe that these predictor variables produced strong, statistically significant effects on the change in the odds of respondents' attitudes toward an environmental development focus. Therefore, I would argue that individuals' values and behaviors toward the environment have been proved in their effects on individuals' attitudes toward sustainable environmental development in their local community.

As to the model of social development framework, the initial purpose of examining the social development framework is to understand the association between individual social relations and community collaborative action as a way for future development alternatives. Using the social development model we can observe that family values and ties to friends were important to those who lived in rural areas, and because of the close ties to family and friends, respondents were more concerned about community social development in order to maintain a harmonious social relationship among them. Also, respondents who viewed their community as having been worse in general would focus more on social development in the community. Since all socially-related predictor variables based on the social development framework produced statistically significant effects on the change in odds of having a social development focus, this significant association between social relationships and social development concerns supported the basis of the social development framework.

Finally, another significant finding is that the initial tension between economic, environmental, and social development alternatives was noted. For example, respondents who were concerned with environmental or social relationships as development alternatives had a tendency to not take economy as their main development preference, and vice versa. I argue that the potential side effects of pursuing economic development are urbanization, increased crime, environmental degradation, and other social or environmental problems, which were unbearable to those who supported either environmental or social development alternatives as a primary community development strategy. At the same time, the slightly negative association between environmental and social development alternatives could be understood because environmental issues are

not only about the environmental itself, but also about the general public involvement.

Therefore, I argue that for those who are concerned about environmental development in the community, it should be necessary to get involved in local social relationships and seek for the majority's understanding of how the environment interacts with their living surroundings.

By examining the research models, we can understand that rural communities are not always understandable as a homogeneous social entity, and in this chapter I have examined this argument and shown that different development preferences are influenced by the individual community context and individual attitudes toward their community circumstances. Obviously, rural residents should note that different development alternatives should be discussed openly through effective and efficient communication and it is crucial to local policy-decision makers that, without understanding the dynamics of local people's attitude differences among different development alternatives, community development strategies might be difficult to form and implement.

CHAPTER V

CONCLUSIONS

LEARNING FROM THREE COMMUNITY DEVELOPMENT FRAMEWORKS

This study began with the question of how community context and the historical economic structure influence community residents' attitude and perception toward local development alternative. I draw upon three traditional perspectives that have been said to influence how residents respond to development. These include: (1) economic growth emphasis, (2) environmental development concern, and (3) social relationship orientation.

To explore this overall research concern, my research findings suggest that the level of local residents' satisfaction with current community economic conditions did not show statistically significant effects on determining their attitudes toward economic development alternatives. For economic satisfaction variables, individuals' satisfaction with current income level, financial security during retirement, and job opportunities did not produce significant effects on the odds of having an economic development focus; individuals' degrees of satisfaction with current community strategies to maintain or enhance the local economy also did not produce significant effects on an economic development focus. One possible explanation for this finding is that the demand for economic development is somewhat universal across rural communities and the odds ratio of this outcome variable was too small to be explained by these economic related predictor variables. However, another possible explanation could be that the effects of external economic conditions on local residents were similar and that the degree of their

satisfaction with individual economic security and community development strategies was also similar as the four communities studied were located in Utah. Based on this interpretation of the results of the economic development model, I argue that individual' attitudes toward economic development alternatives do not come from the rationalization of the problem-solving model, but are influenced by social construction and context. The evidence for this argument is from the strong association between economic development alternative preferences and environmental or social development alternative preferences.

The basis of the environmental development framework focuses on the tension between human societies and the natural environment through macro analysis of social structure, capitalist ideology, attitudes toward the environment, and natural resources in modern consumer societies. Environmental attitudes, social structural forces, and the development of modern technology are the three major forces that influence social change and development. Since rural community can be seen as a field in which social structure and dynamics closely intertwine with the natural environment for community betterment, to explore the balance between the sustainability of the natural environment and rural communities' well-being is a crucial issue.

The environmental development approach was supported in this study. As to the difference between communities' attitudes toward environmental development alternative, Richfield residents had been in hot debate over a proposed coal-fired power plant at the time the survey data was collected, the potential threat of and uncertainty toward this project had made local residents assess the environmental impact on their living surroundings, explaining why responses from Richfield had a higher proportion of residents with an environmental development focus. Such concern might imply a base of

collective awareness of the uncertainty of environmental and social impact. It supports the position that community context matters when evaluating community residents' perceptions of development alternatives.

An association between community residents' environmental values, behaviors and attitudes toward environmental development alternatives were collected. The argument of the environmental development framework was supported by my results. However, the NEP scale and participation in environmentally-related activities did not produce statistically significant effects on the odds of having an environmental development alternative preference. This finding might imply that the NEP attitude and participating in environmentally-related activities would be a way to show one's concern about the living surroundings, but would not be able to explain one's attitude toward environmental development as the primary strategy in the community. I suggest that certain actions reported in the NEP scale, such as donating money to environmental groups or reporting environmental problems to government agencies, seem to be politically correct in modern society when one faces environmentally related issues but does not necessarily link with a primary concern about community development in a broader sense. Environmental concern has become "trendy" or subject to social approval, but does not necessarily reflect an individual's broader outlook.

Residents with specific environmental attitudes and behaviors are more likely to have attitudes supporting an environmental development alternative. I found that rural residents emphasized their environmental quality and valued clean air, water, and greenery. The behaviors of recycling and applying green features to their houses are related to a respondent's degree of environmental behaviors and produce statistically

significant explanatory power on the change in the odds of having an environmental development alternative preference. This environmental development framework produced statistically significant results, supporting the positive association between an individual's environmentally friendly concerns and behaviors and their attitudes toward environmentally-focused development in the community.

In response to the suggestions of those who study social development and in order to analyze the influence of social relationships on community development, scholars have adopted a social interaction and process perspective in community development studies in order to see how the content of interpersonal ties affects the consequences of community development in rural areas. Wilkinson (1970) argued that social structure is defined in an interactional form as observable relationships built up through an action process by members. The role and position of members in a given interactional network are identified and classified to evaluate the pattern of the structure, which determines the continuity of social processes and the direction of social change. To integrate the arguments of community development as a process of interaction, Wilkinson (1991) developed interactional field theory, in which he claimed that the goal of community development is to build up the community field where community capacity for collective action can be created for the common good and social betterment. Therefore, the central focus of the community field is structurally oriented interactions through which communication occurs and fosters positive and cohesive relationships among members. Some empirical studies have examined this view. For example, Sharp (2001) focused on selected features of small-town social structure and its relationship to the community capacity for local action. Drawing on the interactional perspective, community network

analysis, and community power research, he proposed an approach to measuring and evaluating the community field in order to understand more clearly the relationship between community structure and the capacity for local action. His findings complement the thinking about community social capital and social infrastructure and reveal that social relationships and local residents' interaction structure are significantly associated with the community capacity for local action.

Based on these arguments of the social development framework, I examined the association between individuals' social relationships and the attitudes toward social development alternatives and the social development framework was supported by the research model. When studying the community effect I found that respondents in Kanab had a higher odds ratio of having a social development focus. Also, the change through socially-related predictor variables showed that a negative attitude toward community change in general influences local residents to search for community collaborative action to change situations deemed as bad and can say that a community, as a collective social entity, will bring its people together to cope with challenges. Awareness of negative community changes is an impetus toward community change. Additionally, in rural communities the social distance from neighbors is another important index with which to observe changes in the community over time and the extent to which the macro changes affect individuals' attitudes toward social development demands, as a way of living in a traditional *gemeinschaft* society. Additionally, family values and ties to friends were certainly important to those who lived in rural areas and because of these close ties respondents tended to be concerned more about social development in order to maintain a harmonious social relationship.

The intertwined effects between economic, environmental, and social development alternatives should be noticed as well. My research findings indicate that people with an economic development alternative preference had less of a tendency to be concerned about how the environment would be impacted by the process of developing the local economy. One way to interpret the tension between environmental and social development alternatives is that those who are concerned with environmental development alternatives were less likely to have the resources or access to local social connections to deal with public issues, compared to the group emphasizing economic development as a primary direction for the community. This implies that environmental issues are not only about the environment itself, but also about the importance of the general public involvement. Therefore, for those who are concerned about environmental development in the community, it should be necessary and inevitable to get involved in local social relationships and search for an understanding regarding how the environment intertwines with their living surroundings.

COMMUNITY CONTEXT AND RESIDENTS' ATTITUDES TOWARD LOCAL DEVELOPMENT

As for the relationship between community context and rural residents' attitudes toward local development, by examining four rural communities with different economic development patterns through the lens of three development frameworks, one can begin to understand the association between community context at the macro level and locals' attitudes toward development alternatives at the micro level. For example, in Kanab, the primary agriculture sector led the economic activities until the 1960s, when the manufacturing sector replaced the primary in order to maintain local economic

development until the 1980s. After the 1980s, Kanab focused on the development of economic activities in the tertiary sector. The economic structure shift in Kanab was clear and mirrored the steps of outside economic development, demonstrating Kanab's flexibility when facing external and internal structural changes. Another similar case of this economic development pattern is Richfield.

In Richfield, the pattern of industry structure is to shift from the primary sector to the tertiary, with a small piece of the manufacturing sector developing. Now that Richfield has the highest percentage of the employed population in professional and related services and diverse economic activities, we can see that its local economic development was relatively stable. Also, because Richfield had a relatively stable economic structure and a potentially high-polluting industrial project may not have been the only option for encouraging local economic growth, the locals openly debated the issue of a proposed coal-fired power plant, which could have caused both negative and positive effects on the environment and economy, respectively.

As for the other two study areas, Moab and Price, both have long histories of mining but have different patterns of community development. Following a boom-and-bust cycle, Moab faced tough economic times following the 1980s. Because it lacked a developed industry infrastructure and economic diversity, it lacked the social and economic resources to maintain a high level of quality of life. Therefore, Moab has been focusing for decades on developing a recreational industry as their primary development strategies. In contrast, although Price also has a history of mining boom-and-bust cycles, it also had sufficiently diverse economic activities to maintain its economic development.

Now Price is the regional center to social, political, economic, and cultural activities for nearby areas.

Considering the different economic structures in the four communities, I would that Kanab, which has shown flexibility in coping with economic changes throughout its history, would deal with non-economic issues facing the community. On the contrary, Moab would struggle for local economic stability due to its lack of a developed industry infrastructure and economic diversity. As for Price and Richfield, the former would be expected to deal with social issues and community infrastructure improvement and maintenance due to its diversity and population, while the latter would be a case similar to Kanab and focus on other community issues.

When testing the validity of the arguments made above, the findings from my research models indicated that the demands of economic development are universal across rural communities and there was no significant statistical differences between these four communities. These results came as somewhat of a surprise to me, given the suggestions by the literature that Moab would be expected to have a more economy-oriented attitude toward local development in response to its economic disadvantages. In terms of a social development alternative, the findings are not consistent between Kanab and Richfield to support this argument that both communities with stable economic structures would focus on community issues, such as social conflict, environmental problems, or impact of urbanization, etc. Instead, only Kanab showed a higher concern about social development issues, but this was not the case in Richfield. These findings from the two communities with similar patterns of economic structure and different attitudes toward social focus development would be worthwhile to study in the future by

collecting large sample of communities in order to clarify the association between rural economic change patterns and social focus development.

From the findings above, therefore, it is difficult to characterize residents' attitudes toward local development across rural communities without realizing the localized community context. Some issues I found should be studied further, such as economic development as a universal value across rural communities, the idea that communities with a similarly mature pattern of economic structure would focus on similar issues facing the community, or communities with economic, social, and cultural diversity would pay more attention to social issues and community infrastructure improvement and maintenance. More specifically, Kanab, as the representative of a senior oriented community, had a complete economic shift pattern from agriculture, manufacturing, to service industry. Because of its being correspondent with external economic change, we would expect that Kanab is sound in social infrastructure to cope with external structure changes, as the social development framework argues. In addition, its senior community services would be a primary focus for residents in response to the demands of the majority of elderly population. A variety of community services at non-profit and public facilities are highly needed, including daycare centers, senior centers, governmental agencies, hospitals, libraries, and landscaping centers. I would argue that this demand for community services would lead to a senior community developing social service programs to serve its elderly population. From the findings in community development framework models, we can observe that Kanab had higher odds of preferring a social development alternative in their community than others could be seen as the evidence to support my argument that senior communities with sound economic

development flexibility would have richer social capital and stronger sense of community to participate in community improvement activities.

Moab was selected to represent a recreational community transiting from a historic mining community. Developing recreational activities may increase local employment opportunities and population growth which are important to increasing the tax base of the community. However, limits to this type of growth and concerns about costs exceeding the benefits of growth were important to respondents. Residents in recreational communities should understand that seasonal residents would drive up the value of land. As a result, property values throughout the community would be increased making it more difficult for permanent residents to continue to live there. Interestingly, however, in the research results I did not find that Moab has higher odds of being either in economic focus development or in environmental focus development than other communities. It would be worthwhile to collect data from similar recreational communities and compare what social dynamics embedded within them determine their collective and primary concerns about ways to community betterment.

Richfield is basically denoted as an energy community due to a proposed coal-fired power plant launching a debate among the general public. Richfield, with energy-development issues, is facing social welfare and economic impact respectively and the demand of social and environmental amenities would not be paid too much attention until their daily life and environmental quality would be threatened directly by substantive events or issues. In fact, local residents have been facing the tension of either supporting or opposing the proposed coal fired plant. Their stable economic structure proves opportunities to choose alternative development strategies in local community because its

community income sources come from various economic bases. Environmentally unfriendly industries would not be a necessary option to promote the local economy. Therefore, as we can see in the research findings, I would argue that Richfield had higher odds of exhibiting support in environmentally focused development than other communities. The association between economic diversity and environmentally focused development provides an important thread of understanding how rural communities respond to their development demands and environmental concerns.

Price, as the representation of a stable rural community with diverse economic activities, has a firm social base to maintain its economic development. Since Price is also the local center of social, political, economic, and cultural activities for the areas nearby, a single development framework is not directly applicable, as we can observe from the research findings. In this community context, I would argue that diversity in rural living should extend to every dimension of community life including economic, social, or cultural and those diversities would help researchers assess Wilkinson's concept of the community field where communities have intensive interactions among diverse social groups, facilitating communitywide information flow and the awareness of local concerns.

Therefore, this study has proven that a single development framework would not satisfy the demands of diverse rural communities and the extent to which community context influences local residents' attitudes toward local development would be worthwhile for rural scholars to explore. In this study, I have argued the importance of community context in shaping locals' attitudes toward development issues. However, the interpretations and applications of my findings could not be extended too far due to the

small sample size of only four rural communities. Ideally, this study can be treated as an exploratory study to provide a thread of understanding the association between community context at the macro level and locals' attitudes toward development alternatives at the micro level.

The major contribution of this study is to examine three development frameworks applied in rural community studies and to see the extent to which local responses and perceptions explain their attitudes toward community development alternatives. This study establishes a platform to examine the arguments of economic, environmental, and social development frameworks through local residents' personal perceptions of community circumstances and attitudes toward development alternatives. A single development framework would not be enough to explain the complexity of local residents' perceptions and attitudes toward community development unless the researchers integrate other perspectives into the model. For example, in this study, one's attitude toward community economic development would be influenced by the attitude toward environmental alternative which is determined by one's environmental values and behaviors. In addition, one's opposing economic development alternative can be explained by the supportive attitude toward social development concern which comes from one's social connections with his or her living surroundings. Therefore, the complexity of community development studies should be understood through multiple development frameworks.

STUDY LIMITATIONS

Several major limitations including the small number of communities that were recruited for this study, gender, concerns for the measurement of social relations, statistical strategies were present in the data collected during this study.

Originally, I intended to examine the extent to which macro economic and social changes influence individual communities and how such impacts can help us understand how rural residents view their communities as well as future development. However, four rural communities are not sufficient to build a general model to examine this association between macro economic and social change and individual attitudes toward community development.

The second major limitation is gender. Due to the limitation of the sample, the male representatives dominated the opinions about the local community, as well as the attitudes toward community development alternatives. This bias of oversampling men caused my research to interpret the community development mainly through male views. Since the female population in these four communities have been very involved in public affairs and their opinions and values are highly respected today studies of community development should note that collecting the general public's opinions about the local community without sufficiently covering female views cannot present a complete picture that reflects the real situation in the local community.

The third limitation concerns the measure of social relations in community. In this study, I focused on individuals' relationships with family and friends, and individuals' feelings about their closeness with their neighbors and local organizations. This would depict part of the social life in the community, but not all of it. In order to better

understand the association between individuals' social relationships with their community and their attitudes toward community development preferences, a concept of social networks should be applied for. Therefore, future studies, preferably those that are focused on understanding attitudes toward community development, should consider these limitations to improve the knowledge of community development in rural areas.

The fourth issue is about the statistical strategy applied in this study. In social science, research data is analyzed in a qualitative sense and data are measured at the nominal or ordinal level. A number of statistical methods have been developed for the nature of these types of measurement. The two most popular methods applied to these situations are the "logistic regression" and the "probit" models. They can be used to analyze the cases where the dependent variable is either nominal or ordinal. In a previous chapter I have discussed that the logistic model regresses a function of the probability that a case falls in a certain category of Y, on a linear combination of x variables.

Logistic models help scholars estimate the log of the odds that a case falls in one category on Y versus another. In this study, I used this model to estimate the log of the odds that a respondent supporting economic, environmental, or social focus development respectively. However, in the probit model, we turn to look for a unit change in x producing a "*b*" unit change in the cumulative normal probability, as known as Cumulative Distribution Function (CDF), that Y falls in a particular category. Therefore, the difference between the logistic regression and probit models lies on the estimation of dependent variable in left-hand side of the equation. That is, the logistic curve has slightly flatter tails that results in the probit curve approaches the axes more quickly than the logistic curve. Basically, these two models produced similar results in this study

although the estimates of parameters in these two models were not directly comparable.

As a result, I present the results of logistic models as the basis of analyzing my research data.

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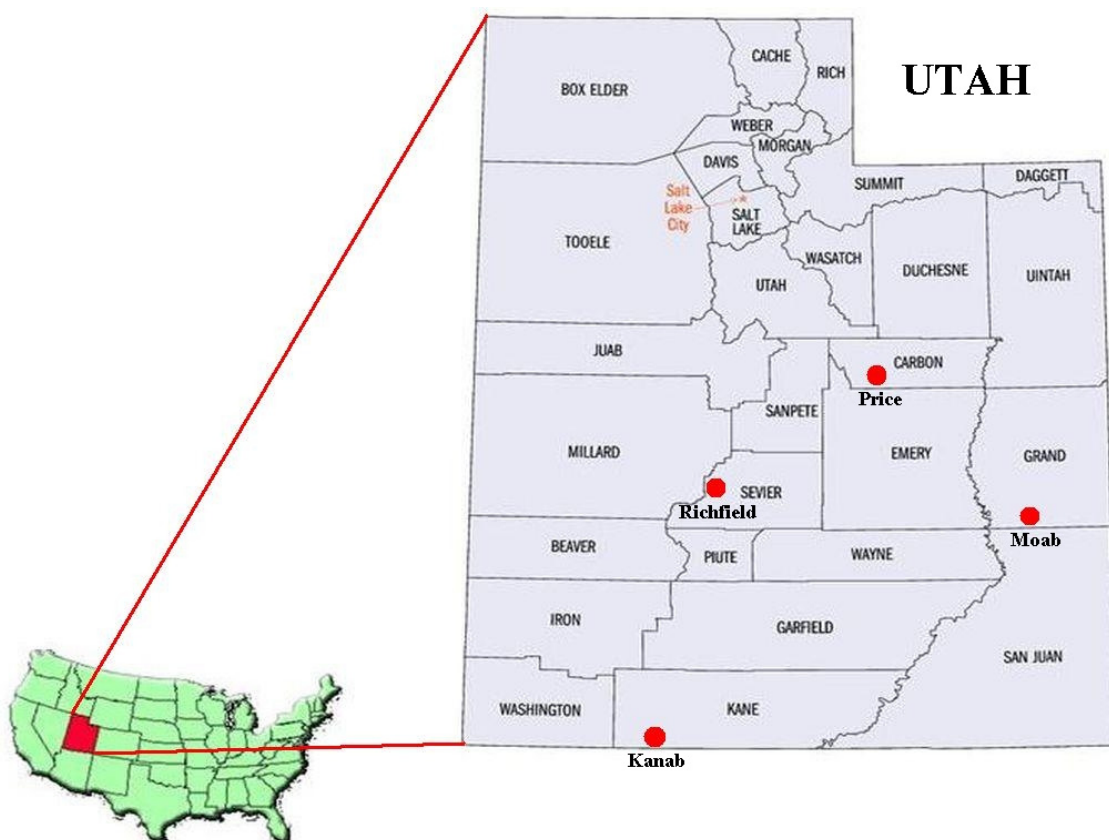
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APPENDICES

Appendix A. Map of Study Area

Study Areas



Appendix B. Permanent Version of Survey

The 2008 Utah Community Quality of Life and Lifestyle Survey



Please Return to

The Rural Community Research Team

0730 Old Main Hill

Department of Sociology, Social Work & Anthropology

Utah State University

Logan, Utah 84322-0730

A. Community Infrastructure/Community Health

We would like to begin by asking you a few questions about your community. When you answer these questions please think about the town you live in or the town closest to where you live.

Please fill in the numbered circle of your answer.

1. Communities across the nation are undergoing change. When you think about this past year, would you say ...

My community has changed for the

- ① Changed for the better
- ② Stayed the same
- ③ Gotten worse
- ④ Have not lived there for a year

2. Listed below are several pairs of contrasting views regarding your community. For each pair please indicate which one of the two views you most agree with – the one in the left-hand column or the one in the right-hand column – by filling in the appropriate numbered circle on the line between them.

My community is ...

Friendly	① ... ② ... ③ ... ④ ... ⑤ ... ⑥ ... ⑦	Unfriendly
Trusting	① ... ② ... ③ ... ④ ... ⑤ ... ⑥ ... ⑦	Distrusting
Supportive	① ... ② ... ③ ... ④ ... ⑤ ... ⑥ ... ⑦	Non Supportive
Safe	① ... ② ... ③ ... ④ ... ⑤ ... ⑥ ... ⑦	Unsafe

3. How would you describe your overall feelings toward your neighbors? Would you say you are:

- ① Very close
- ② Somewhat close
- ③ Neither close nor distant
- ④ Somewhat distant
- ⑤ Very distant

4. Please indicate how satisfied or dissatisfied you are with each of the following items.

	Strongly Satisfied		Neither Satisfied Nor Dissatisfied		Strongly Dissatisfied		Does Not Apply
1. Your current income level	①	②	③	④	⑤		<input type="checkbox"/>
2. Your financial security during retirement	①	②	③	④	⑤		<input type="checkbox"/>
3. Your health	①	②	③	④	⑤		<input type="checkbox"/>
4. Your family	①	②	③	④	⑤		<input type="checkbox"/>
5. Your friends	①	②	③	④	⑤		<input type="checkbox"/>
6. Your religion/spirituality	①	②	③	④	⑤		<input type="checkbox"/>
7. Your community	①	②	③	④	⑤		<input type="checkbox"/>
8. Your education	①	②	③	④	⑤		<input type="checkbox"/>
9. Your job satisfaction	①	②	③	④	⑤		<input type="checkbox"/>
10. Your job security	①	②	③	④	⑤		<input type="checkbox"/>
11. Job opportunities for you	①	②	③	④	⑤		<input type="checkbox"/>
12. Your housing	①	②	③	④	⑤		<input type="checkbox"/>
13. Clean air and water	①	②	③	④	⑤		<input type="checkbox"/>
14. Greenery and open space	①	②	③	④	⑤		<input type="checkbox"/>
15. Your marriage	①	②	③	④	⑤		<input type="checkbox"/>
16. Your free time	①	②	③	④	⑤		<input type="checkbox"/>

5. In rural communities many development strategies have been used to maintain or enhance the local economy. When you think of your community how would you rate the following development strategies?

	Strongly Agree		Neither Agree Nor Disagree		Strongly Disagree		Does Not Apply
1. Small business development	①	②	③	④	⑤		<input type="checkbox"/>
2. Industrial recruitment	①	②	③	④	⑤		<input type="checkbox"/>
3. Tourism development	①	②	③	④	⑤		<input type="checkbox"/>
4. Retaining and expanding existing business	①	②	③	④	⑤		<input type="checkbox"/>
5. Recruiting box stores (Home Depot, Wal-Mart, etc.)	①	②	③	④	⑤		<input type="checkbox"/>
6. Enhancing agricultural business	①	②	③	④	⑤		<input type="checkbox"/>
7. Expanding agricultural production	①	②	③	④	⑤		<input type="checkbox"/>
8. Expanding resource extraction (oil, coal, etc.)	①	②	③	④	⑤		<input type="checkbox"/>

Below, we would now like to ask you a few questions about any changes or issues you have seen in your community during the last five years. To begin,

6. What do you consider to be the most IMPORTANT issue affecting the quality of life in your community? Please write your answer below.

7. Have you noted any major changes in the county that have occurred over the last five years?

- ① Yes ●
 ② No
 ③ Don't know

7.1 If yes, what would you say is the most POSITIVE change, if any, that has occurred? (Please be specific)

7.2 If yes, what would you say is the most NEGATIVE change, if any, that has occurred? (Please be specific)

8. Do you envision additional changes occurring in the next five years?

- ① Yes
② No
③ Don't know

8.1 If yes, what changes do you see in the next five years?

9. If tomorrow a major disaster occurs, whom do you think should work together to cope with the situation?

	Strongly Agree		Neither Agree Nor Disagree		Strongly Disagree	Don't know
1. Households would work by themselves	①	②	③	④	⑤	<input type="checkbox"/>
2. Neighbors would work with one another	①	②	③	④	⑤	<input type="checkbox"/>
3. Local church/ward would work together	①	②	③	④	⑤	<input type="checkbox"/>
4. Local government/municipal political leaders	①	②	③	④	⑤	<input type="checkbox"/>
5. State government	①	②	③	④	⑤	<input type="checkbox"/>
6. Federal government	①	②	③	④	⑤	<input type="checkbox"/>

B. Organizational Affiliation

Now we would like to ask you about your community and your involvement with community organizations.

10. Are you in a leadership position of any community or local area clubs, groups or other organizations of any kind?

- ① Yes
② No

10.1 If yes, how many organizations are you in a leadership position?

- ① 1-3 organizations
② 4-5 organizations
③ 6-10 organizations
④ More than 10 organizations

11. How involved are you in local groups and organizations, that is, those that hold meetings and activities in your community?

	Never	1-5 Times a Year	6-11 Times a Year	Once a Month	Weekly or More
1. Service and fraternal organizations (Lions, Kiwanis, Rotary, United Way, etc.)	①	②	③	④	⑤
2. Recreational groups (softball, bowling, card clubs, hiking club, mountain biking, backcountry horseman, etc.)	①	②	③	④	⑤
3. Job-related organizations (farm organizations, professional associations, labor unions, etc.)	①	②	③	④	⑤
4. Church or other religious groups (Relief society, Bible study groups, etc.)	①	②	③	④	⑤
5. College clubs/ organizations	①	②	③	④	⑤
6. Informal organizations (neighborhood groups, book club, etc.)	①	②	③	④	⑤
7. Local chapters of conservation organizations (Audubon Society, Sierra Club, etc.)	①	②	③	④	⑤
8. Youth groups (4-H, Boy or Girl Scouts, etc.)	①	②	③	④	⑤
9. Local government (elected official, volunteer fire dept., member of committee or board, etc.)	①	②	③	④	⑤
10. School organizations (PTA, school board, boosters, parent classroom, volunteer, etc.)	①	②	③	④	⑤
11. Other, (please specify)	①	②	③	④	⑤

12. Do you donate money or any necessary items to any community or local area clubs, groups or other organizations of any kind?

- ① Yes
② No

12.1 If yes, how many organizations do you donate money or any necessary items?

- ① 1-3 organizations
② 4-5 organizations
③ 6-10 organizations
④ More than 10 organizations

C. Individual Health

Now, we would like to ask you a few questions about your individual health.

13. In general, would you say your health is :

- ① Excellent
- ② Very good
- ③ Good
- ④ Fair
- ⑤ Poor
- ⑥ Don't Know

14. On average, how often do you see a medical provider, such as a doctor, nurse, or physician's assistant?

- ① More than once a year
- ② Once a year
- ③ Less than once a year
- ④ Never

15. Have you ever smoked cigarettes?

- ① Yes ☒
- ② No ☐

15.1 If yes, how long have you smoked? _____ Years

15.2 On average, how many cigarettes per day do you smoke?

- ① Less than 5 cigarettes
- ② About half a pack
- ③ About one pack
- ④ About two or three packs
- ⑤ Four packs or more

15.3 If you no longer smoke, when did you quit smoking?

_____ (mm/yy)

16. Have you had any of the following diagnosed illnesses? (If not, please go to question 24)

Diagnosed illness	Type (name)	Diagnosis Date (mm/yy)
1. Cancer		
2. Heart disease		
3. Respiratory disease		

17. (Continued) If yes, how likely is it that any of your illness/es are related to your current or past work? (If not, please go to question 19)

Diagnosed illness	Highly Likely	Likely	Unlikely	Highly Unlikely
1. Cancer	①	②	③	④
2. Heart disease	①	②	③	④
3. Respiratory disease	①	②	③	④

18. (Continued) If yes, for each disease identified with work, what occupation/s do you think contributed to your illness/es?

Diagnosed illness	Occupation/s
1. Cancer	
2. Heart disease	
3. Respiratory disease	

19. If yes, how likely is it that any of your illness/es are related to the physical environment around you, such as a toxic waste site, coal mine, air or water quality?

Diagnosed illness	Highly Likely	Likely	Unlikely	Highly Unlikely
1. Cancer	①	②	③	④
2. Heart disease	①	②	③	④
3. Respiratory disease	①	②	③	④

20. (Continued) If yes, what environmental exposure/s do you think is/are related to your illness/es?

21. Have you ever worked in one of the following extractive industries?

① Yes

② No

21.1 If yes, circle all that apply to you and the number of years worked.

Type of extractive industries	Length of Work Period (years)
1. Agriculture	
2. Coal	
3. Natural gas	
4. Oil	
5. Timber	
6. Uranium	
7. Other, (please specify)	

D. Lifestyle

For this section of the survey, we would like to ask you a few questions about your lifestyle. Please circle those that apply.

22. What energy sources do you use in your home?

	Yes	No
1. Electricity	①	②
2. Natural gas, propane, or liquefied petroleum gas	①	②
3. Heating oil	①	②
4. Wood or biomass	①	②
5. Other, (please specify) _____	①	②

23. Was your home or any portion of it built with recycled materials, wood certified as sustainably harvested, or any other green design features?

① Yes

② No

③ Not sure

24. Please enter the number of miles you travel per year for each mode of transportation:

- ① Automobiles, including personal vehicles, taxis, and carpools () miles
- ② Bus, including metro and long distance service () miles
- ③ Rail, including subways, inner-city light rail, cross country trains ... () miles
- ④ Air travel () miles

25. What best describes the vehicle/s you most often drive or ride in?

	Yes	No
1. A hybrid	①	②
2. A small or compact car (2 door)	①	②
3. A mid size car (4 door sedan)	①	②
4. A large car (including vans and minivans)	①	②

26. Which energy saving features and habits do you have in your home?

	Yes	No
1. Compact fluorescent bulbs	①	②
2. Energy efficient appliances	①	②
3. Extra insulation	①	②
4. Insulating blinds	①	②
5. Solar panels	①	②
6. Storm doors and windows	①	②
7. Water saving fixtures	①	②
8. Turn off lights when leaving rooms	①	②
9. Use power strips to turn off stand-by lights	①	②
10. Turn off computers and monitors when not in use	①	②
11. Dry clothes outside whenever possible	①	②
12. Keep thermostat relatively low in winter	①	②
13. Unplug small appliances when not in use	①	②
14. Minimal use of power equipment when landscaping ...	①	②

27. What best describes your diet?

- ① Vegan—plant based foods only
- ② Vegetarian—primarily plant based foods, but some dairy
- ③ Omnivore—an assortment of meat, seafood, vegetables, dairy and grains
- ④ Carnivore—meat, seafood, and dairy several times a week
- ⑤ Top of the food chain—meat, seafood, or dairy at almost every meal

28. Where do you obtain most of your food? Circle one only

- ① Farmers markets, gardens, cooperatives, and other local and fresh sources
- ② Natural foods markets
- ③ Supermarkets for some items, natural food stores for others
- ④ Supermarkets, convenience stores, and prepared foods from restaurants
- ⑤ Restaurants, fast foods, and take out

29. How often do you select foods that are certified organic or sustainably produced?

- ① Most of the time
- ② Sometimes
- ③ Almost never

30. Do you have a garden or share one to grow your own vegetables and herbs?

- ① Yes
- ② No

30.1 If yes, what is the approximate size of your garden plot?

_____ Square feet

31. Which water saving features and habits do you have in your home?

	Yes	No
1. Low flow toilets	①	②
2. Low flow shower heads and faucet.....	①	②
3. Instant water heaters on sinks	①	②
4. Rainwater catchment system	①	③
5. Grey water recycling system	①	②
6. Drought tolerant landscaping	①	③

32. What proportion of the following wastes do you recycle?

	None	A Fair Amount	Almost All
1. Aluminum	①	③	③
2. Electronics	①	③	③
3. Glass	①	③	③
4. Paper	①	③	③
5. Plastic	①	③	③

33. The statements below ask your opinions about the environment.

	Strongly Agree	Neither Agree Nor Disagree	Strongly Disagree		
1. The so-called 'ecological crisis' facing humankind has been greatly exaggerated.	①	②	③	④	⑤
2. If things continue on their present course, we will soon experience a major ecological catastrophe.	①	②	③	④	⑤
3. The balance of nature is strong enough to cope with the impacts of modern industrial nations.	①	②	③	④	⑤
4. The earth is like a spaceship with only limited room and resources.	①	②	③	④	⑤
5. Humans are severely abusing the environment.	①	②	③	④	⑤

34. In the past 12 months, have you or a member of your household participated in any of the following activities?

	Yes	No
1. Contributed time or money to an environmental or conservation group	①	②
2. Attended a public hearing or meeting about the environment	①	②
3. Contacted a government agency to get information or complain about an environmental problem	①	②
4. Voted for or against a political candidate in part because of his or her position on the environment	①	②
5. Read a conservation or environmental magazine	①	②
6. Watched a television special on the environment	①	②

E. Background Information

For the final section of the survey, we would like to ask you some questions about you and your household. We are asking these questions to better understand how different families see their community. Your answers are completely confidential.

35. What is your age? _____ years

36. What is your gender?

- ① Female
- ② Male

37. What is your current marital status?

- ① Married
- ② Never Married
- ③ Divorced/Separated
- ④ Widowed

38. What is your current/last occupation?

My primary occupation is/was _____

39. Which of the following BEST describes your current employment situation?

- ① Employed for pay by a company, business or agency
- ② Self-employed
- ③ Unemployed, but looking for work
- ④ Unemployed, not looking for work
- ⑤ Part-time employed
- ⑥ Retired
- ⑦ Homemaker
- ⑧ Other, (please specify) _____

40. How many people live in your home (including yourself)? _____

41. How many children do you have? _____

42. What was your approximate household income from all sources, before income taxes, for 2007? Please circle one

- ① Less than \$20,000
- ② \$20,000-\$29,999
- ③ \$30,000-\$39,999
- ④ \$40,000-\$49,999
- ⑤ \$50,000-\$59,999
- ⑥ \$60,000-\$69,999
- ⑦ \$70,000-\$79,999
- ⑧ \$80,000-\$89,999
- ⑨ \$90,000-\$99,999
- ⑩ \$100,000-\$149,999
- ⑪ \$150,000-\$199,999
- ⑫ \$200,000 or more

43. Please indicate the total number of years you have lived in 1. Utah and 2. your community

- 1. _____ Years lived in Utah
- 2. _____ Years lived in your community

44. Do you own or rent your residence?

- ① Own
- ② Rent

45. Which best describes your home?

- ① An estate, ranch, or farm
- ② A free standing single family house
- ③ A house or building with 4 or fewer units
- ④ A small apartment building (5-20 units)
- ⑤ A large apartment building (21 or more units)

46. What is the approximate area of land occupied by your home, structures, and yard? If you live on an estate, farm or ranch, please don't count grazing lands, croplands, or wildlands.

_____ Square feet or

_____ Acres

47. What is the size of your residence?

- ① Larger than 2500 square feet
- ② 1900-2499 square feet
- ③ 1500-1899 square feet
- ④ 1000-1499 square feet
- ⑤ 500-999 square feet
- ⑥ Smaller than 500 square feet
- ⑦ Don't Know

48. What is your highest level of formal education?

- ① Less than 9th grade
- ② 9th to 12th grade (no diploma)
- ③ High school diploma (or equivalency)
- ④ Some college, no degree
- ⑤ Associate degree
- ⑥ Bachelors degree (Please specify your major) _____
- ⑦ Graduate or professional degree (Please specify your major) _____

49. With which racial or ethnic group do you most closely identify?

- ① African
- ② African American
- ③ Caucasian
- ④ Asian or Pacific Islander
- ⑤ Latino/Hispanic
- ⑥ Native American
- ⑦ Other, (please specify) _____

50. Which is the best description of your religious belief?

- ① Buddhist
- ② Catholic
- ③ Jewish
- ④ Latter-day Saints (LDS)
- ⑤ Muslim
- ⑥ Protestant
- ⑦ Other, (please specify) _____

If you have additional comments that you believe would be helpful in helping us understand your community please write them below.

Thank you for taking the time to fill out this survey.

Appendix C. Comparison of Sociodemographic Characteristics between US Census 2000
Data and Survey Data in Four Communities

Comparison of Sociodemographic Characteristics between US Census 2000 Data and Survey Data in Four Communities

	Kanab		Moab		Price		Richfield	
	Census	Survey	Census	Survey	Census	Survey	Census	Survey
	2000		2000		2000		2000	
Age								
<24	35.16	.83	38.46	.00	43.64	.00	45.45	.00
25-44	20.11	14.94	28.27	18.14	22.67	18.70	23.66	27.86
45-64	24.19	44.81	20.59	51.33	19.69	50.44	16.37	36.07
65 & up	20.54	39.00	12.68	30.53	14.00	29.57	14.52	36.07
Median age	40.10	60.00	35.50	58.00	31.50	57.00	28.70	56.00
Gender								
Female	51.49	38.43	51.27	37.00	52.15	34.05	50.74	27.56
Male	48.51	61.57	48.73	63.00	47.85	65.95	49.26	72.44
Marital Status								
Now married, except separated	66.06	70.66	46.52	64.44	55.52	76.52	64.29	81.63
Never married	18.08	6.20	29.45	8.00	25.25	3.91	21.38	2.47
Separated\Divorced	9.00	11.16	16.35	19.11	11.67	10.87	8.25	9.89
Widowed	6.86	11.98	7.67	8.44	7.55	8.70	6.08	6.01

Notes: Percents were presented in cells. The sum of percentage for each variable from survey data could be less than 100 due to the missing values.

Appendix D. Summary of Percentage Distributions of Three Development Foci in Four
Communities

Summary of Percentage Distributions of Three Development foci in Four Communities

Development Focus	Kanab	Moab	Price	Richfield	Total
Economic, only	10.16% (25)	14.41% (33)	26.92% (63)	24.03% (68)	19.05% (189)
Environmental, only	2.44% (6)	.44% (1)	1.71% (4)	13.43% (38)	4.94% (49)
Social, only	54.88% (135)	48.91% (112)	28.63% (67)	29.33% (83)	40.02% (397)
Eco & Env	.00% (0)	.44% (1)	.85% (2)	.71% (2)	.50% (5)
Env & Soc	2.44% (6)	7.86% (18)	2.56% (6)	9.89% (28)	5.85% (58)
Soc & Eco	18.70% (46)	17.90% (41)	13.68% (32)	7.77% (22)	14.21% (141)
All three foci	.00% (0)	.87% (2)	.85% (2)	.71% (2)	.60% (6)
No response	11.38% (28)	9.17% (21)	24.79% (58)	14.13% (40)	14.82% (147)
Total	100% (246)	100% (229)	100% (234)	100% (283)	100% (992)

Notes: Numbers in parentheses are the number of cases.

Appendix E. Index of Coding Dependent and Independent Variables

Index of Coding Dependent and Independent Variables

Variable	Description	Measurement
Dependent Variables¹		
1. Economic Focus	A dichotomous variable, showing a respondent either present (1) or absent (0) support for economic development focus in local community	Coding from three open-ended questions in survey, Q6, Q7, and Q8. When a respondent mentioned economic development issues, community infrastructure, taxes, and job opportunities, etc., he or she would be coded as 1, otherwise 0
2. Environmental Focus	A dichotomous variable, showing a respondent either present (1) or absent (0) support for environmental development focus in local community	Coding from three open-ended questions in survey, Q6, Q7, and Q8. When a respondent mentioned air and/or water quality, sustainable development, or other environmental issues, he or she would be coded as 1, otherwise 0
3. Social Focus	A dichotomous variable, showing a respondent either present (1) or absent (0) support for social development focus in local community	Coding from three open-ended questions in survey, Q6, Q7, and Q8. When a respondent mentioned factors including social conflict, trust, social relationships, population growth, newcomers, etc, he or she would be coded as 1, otherwise 0.

1. Three dependent variables are not mutually exclusive that means a respondent was able to express his or her support for either economic, environmental, social development focus, or any combinations. In other words, the answers in three open-ended questions by a respondent would be checked that all apply in terms of three development foci. However, each dependent variable is a dichotomous variable, either “present” as 1 or “absent” as 0.

(Continued on the next page)

Index of Coding Dependent and Independent Variables (*Continued*)

Variable	Description	Measurement
Independent Variables		
4. Community	Four communities in Utah were surveyed for this study: Kanab, Moab, Price, and Richfield	
5. Alternative Eco.	Using variable 1 as independent variable to examine environmental and social development focus models respectively.	
Env.	Using variable 2 as independent variable to examine economic and social development focus models respectively	
Soc.	Using variable 3 as independent variable to examine economic and environmental development focus models respectively	
Economic Factors		
6. Economic Satisfaction	An aggregated variable of measuring one's satisfaction with local economic conditions	Based upon the result of factor 1 in Table 4, summing up the scores of five questions in survey given by a respondent: Q4.1, Q4.2, Q4.9, Q4.10, and Q4.11
7. Business Devp.	An aggregated variable of measuring one's satisfaction with community business development strategies	Based upon the result of factor 1 in Table 6, summing up the scores of Q5.1, Q5.2, Q5.3, and Q5.4
8. Primary Sector Devp.	An aggregated variable of measuring one's satisfaction with community primary sector development strategies	Based upon the result of factor 2 in Table 6, summing up the scores of Q5.6, Q5.7, and Q5.8
9. Gov. Connection	The frequency of a respondent involved in government meetings and activities	Q11.9 in survey

(Continued on the next page)

Index of Coding Dependent and Independent Variables (*Continued*)

Variable	Description	Measurement
Environmental Factors		
10. Clean Air & Water	One's satisfaction with clean air and water in local community	Q4.13 in survey
11. Greenery	One's satisfaction with greenery and open space	Q4.14 in survey
12. Green features in house	One's any portion of house was built with recycled materials, wood certified or any other green design features	Q23 in survey
13. Recycle	One's waste recycle behavior	Q32 in survey
14. NEP scale	New environmental paradigm scale	Q33 in survey
15. Env. Involve	One's participation in environment-related activities	Q34 in survey
Social Factors		
16. Community Change	One's view of community being changed for the better, the same, or the worse	Q1 in survey
17. NB Distance	One's overall feelings toward social distance from neighbors	Q3 in survey
18. Social Satisfaction	One's satisfaction with social life in terms of family relationship, friendship, married life, and religion	Based upon the result of factor 2 in Table 4, summing up the scores of five questions in survey given by a respondent: Q4.4, Q4.5, Q4.6, and Q4.15
19. Community Support	One's feelings about community support from neighbors, local organizations, and local government	Summing up the scores of 3 questions in survey given by a respondent: Q9.2, Q9.3, and Q9.4
20. Support Local Org.	One's support for local organizations	Q12 in survey

(Continued on the next page)

Index of Coding Dependent and Independent Variables (*Continued*)

Variable	Description	Measurement
Control Variables		
21. Age	One's biological years	Q35 in survey
22. Education	One's highest level of formal education	Q48 in survey
23. Length of Residency	The years of one's living in local community	Q43.2 in survey

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RESEARCH AREAS

Social Network Analysis, Community Development, Environmental/Natural Resource
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EDUCATION

2010	Ph.D in Sociology, Utah State University; Dissertation title: <i>Resident Attitudes toward Community Development Alternatives</i> (Major Professor: Dr. John C. Allen)
2001	M.A. in Sociology, National Taipei University, Taiwan; Thesis title: <i>The Class Exhibition in Dual-Earner Family</i> (Major Professor: Dr. Yow-Suen Sen)
1999	B.A. in Sociology, National Taipei University, Taiwan

PROFESSIONAL POSITIONS

2008~2010	Research Assistant, Department of Sociology (SSW&A), Utah State University, USA
2007~2008	Graduate Interns, Western Rural Development Center, Utah State University, USA
2006~2008	Research Assistant, Department of Sociology (SSW&A), Utah State University, USA
2005~2006	Teaching Assistant, Department of Sociology (SSW&A), Utah State University, USA
2001~2003	Research Assistant, Institute of Sociology, Academia Sinica, Taipei, Taiwan
1999~2001	Research Assistant, Department of Sociology, National Taipei University, Taiwan

HONOR & AWARDS

2001	The Glede Award of National Taipei University.
------	------------------------------------------------

1999~2001 Distinction in the Graduate School of Sociology, Governmental Scholarships, Ministry of Education, Taiwan.

RESEARCH PROJECTS

2009 Uintah Basin Community Quality of Life Survey. The Uintah Mitigation Committee, 2008-2009. \$40,000 USD.
 2009 Determinative Space Experiment on Open-ended Questions – Does Box/Line for WERA 1010 at Tucson, Arizona
 2007 Utah Community Quality of Life and Lifestyle Survey. Utah Agricultural Experiment Station financial support.

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2008 SOC 3120: Social Statistics, Utah State University

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2010 Manuscript Reviewer: *Society & Natural Resources*
 2005~2010 Member of the *American Sociological Association*
 2005~2010 Member of *Rural Sociology*
 2007~2010 Member of *International Symposium on Society and Resource Management*

PUBLICATIONS

Refereed Journal Articles

2010 **Chih-Yao Chang**, John C. Allen, Susan Dawson, and Gary Madsen. 2010. "Network Analysis as a Method for Understanding the Dynamics of Natural Resource Management in Rural Communities." *Society & Natural Resources*. (Forthcoming)
 2009 **Chih-Yao Chang**, and John C. Allen. 2009. "Re-examine New Environmental Paradigm Scale in the United States, Taiwan, and China." *Journal of Environmental Education*. (under review)
 2009 **Chih-Yao Chang**, and John C. Allen. 2009. "Rural Residents' Attitudes toward Community Development in the Context of Macro- and Meso-level Structure." *Social Forces*. (under review)
 2008 Allen, John C., Susan E. Dawson, Gary E. Madsen, and **Chih-Yao Chang**. 2008. "A Social Relationship Response to a Proposed Coal-Fired Power Plant: Network Theory and Community Change." *Journal of the Community Development Society* 39(1):35-49.
 2003 **Chang, Chih-Yao**. 2003. "The Class Exhibition in Dual-Earner Family." *Research in Applied Psychology* 17:187-221.

Conference Papers

- 2010 **Chih-Yao Chang** and John C. Allen. 2010. "Resident Attitudes toward Community Quality of Life in Oil Extraction Areas." in *the 16th International Symposium on Society and Resource Management – Tyranny of 'Or': Conservation or Development? Preservation or Utilization?* Corpus Christi, Texas: the International Association for Society and Natural Resources.
- 2009 **Chih-Yao Chang** and John C. Allen. 2009. "Community Context and Residential Attitudes: A Comparison of Four Rural Communities in Utah." in *the 72nd Annual Meeting of the Rural Sociological Society – Climate Change and Societal Response: Livelihoods, Communities, and the Environment*. Madison, Wisconsin: Rural Sociological Society.
- 2009 John C. Allen, **Chih-Yao Chang**, Pei-Shan Liao, Xiaoling Fang, and Marquart-Pyatt Sandra. 2009. "A Cross-National Examination of Rural Community Behaviors and Environmental Attitudes: U.S.A., China and Taiwan." in *the 72nd Annual Meeting of the Rural Sociological Society – Climate Change and Societal Response: Livelihoods, Communities, and the Environment*. Madison, Wisconsin: Rural Sociological Society.
- 2009 **Chih-Yao Chang**, John C. Allen, and Fang, Xiaoling. 2009. "The Community Quality of Life and Satisfaction Survey on the Southeastern Coast of China: Cases of Two Communities In Yiwu City, Zhejiang." in *the 72nd Annual Meeting of the Rural Sociological Society – Climate Change and Societal Response: Livelihoods, Communities, and the Environment*. Madison, Wisconsin: Rural Sociological Society.
- 2008 Allen, John C. and **Chih-Yao Chang**. 2008. "Local Leadership: Who's In and Who's Out." in *the 71st Annual Meeting of the Rural Sociological Society – Rural Sociology as Public Sociology: Past, Present, Future*. Manchester, New Hampshire.
- 2007 **Chang, Chih-Yao**, John C. Allen, Susan Dawson, and Gary Madsen. 2007. "Network Analysis as a Method for Understanding the Dynamics of Natural Resource Management in Rural Communities." in *2007 International Symposium on Society and Resource Management: Landscape Continuity and Change - Social Science Perspectives and Interdisciplinary Conversations*. Park City, Utah: the International Association for Society and Natural Resources.
- 2007 Allen, John C., Susan Dawson, Gary Madsen, and **Chih-Yao Chang**. 2007. "Rural Community Response to a Coal Fire Plant Proposal: Integrating Network Analysis into Understanding Local Conflict." in *70th Annual Meeting of the Rural Sociological Society - Social Change and Restructuring in Rural Societies: Opportunities and Vulnerabilities*. Santa Clara, California: Rural Sociological Society.

- 2007 Dawson, Susan, Gary Madsen, John C. Allen, and **Chih-Yao Chang**. 2007. "Understanding Rural Community Conflict Using Network Analysis: A Case Study of a Proposed Coal-Fired Power Plant in the Southwestern United States." in *6th Global Conference: Environmental Justice & Global Citizenship*. Mansfield College, Oxford: The Inter-Disciplinary Press.

Technical Reports

- 2009 Uinta Basin Social and Quality of Life Impact Study Final Report
- 2009 The 2008 Kanab Community Quality of Life and Lifestyle Final Report
- 2009 The 2008 Moab Community Quality of Life and Lifestyle Final Report
- 2009 The 2008 Price Community Quality of Life and Lifestyle Final Report
- 2009 The 2008 Richfield Community Quality of Life and Lifestyle Final Report